Ontario

Ministry of
Agriculture
and Food

Report of
the Agricultural
Research
Institute
# of Ontario

April 1, 1982—March 31, 1983

84- 3794 /

COVER PHOTO: Canola, shown here at the Elora Research Station, is a new crop to Ontario that is quickly gaining acceptance among growers. In the past 4 years, the crop has expanded from 100 hectares to 6,000 hectares harvested this year. Canola is used as a source of vegetable oil and rapeseed meal, a protein concentrate for livestock. An important research goal is the development of triazine tolerant varieties for Ontario.

Report of the Agricultural Research Institute of Ontario

Toronto, Ontario
March 31, 1983

Dr. D.C. Wilson, Chairman
Agricultural Research Institute of Ontario

Dear Sir:

I submit herewith a report of the Ontario Ministry of Agriculture and Food's research programs in agriculture, veterinary medicine, and household science for the year ending March 31, 1983.

Respectfully submitted,

J.C. Rennie
Director of Research
Agricultural Research Institute
of Ontario

Mississauga, Ontario
April 1, 1983

The Honourable Dennis R. Timbrell
Minister of Agriculture and Food
Legislative Buildings
Toronto, Ontario M7A 1A3

Dear Sir:

I have the honour to submit the twenty-first Research Report of the Agricultural Research Institute of Ontario for the period April 1, 1982 to March 31, 1983.

The institute wishes to express its sincere appreciation for the wholehearted co-operation of the administration and staff of the institutions at Centralia, Guelph, Kemptville, New Liskeard, Ridgetown, Toronto, and Vineland in the planning and execution of research programs in agriculture, veterinary medicine, and household science.

Respectfully submitted,

Donald C Wilson

D.C. Wilson
Chairman
Agricultural Research Institute
of Ontario

Members of the Agricultural Research Institute of Ontario

Dr. D.C. Wilson, *Chairman*
Dr. D.H. Lees, *Vice-Chairman*
Dr. J.C. Rennie, *Director of Research*
Mr. A.E. Cosgrove, *Comptroller*
Mr. G. Bowman
Dr. J.J. Cartier
Mr. K.R. Collver
Mr. R.C. Eastman
Dr. M.G. Freeman
Mr. S. Fraleigh
Mr. P. Hannam
Dr. R.D. MacKay
Mr. J.M. McIlquham
Mr. K. Murray
Mr. R.M. Murray
Mr. H. Vander Pol
Mr. R. Wolfe

Reporting Institutions

Agricultural Laboratory Services *Building 43, McGilvray Street* *University of Guelph* *Guelph, Ontario N1G 2W1*	ALS
Centralia College of Agricultural Technology *Huron Park, Ontario N0M 1Y0*	CCAT
Economics Branch *Ontario Ministry of Agriculture and Food* *4th Floor* *801 Bay Street* *Toronto, Ontario M7A 2B2*	EC
Horticultural Research Institute of Ontario *Vineland Station, Ontario L0R 2E0*	HRIO
Kemptville College of Agricultural Technology *Kemptville, Ontario K0G 1J0*	KCAT
New Liskeard College of Agricultural Technology *New Liskeard, Ontario P0J 1P0*	NLCAT
Ridgetown College of Agricultural Technology *Ridgetown, Ontario N0P 2C0*	RCAT
University of Guelph *Guelph, Ontario N1G 2W1*	UG

Introduction

The Agricultural Research Institute of Ontario (ARIO) was established by an Act of the Provincial Legislature in 1962. The institute, which is responsible to the Minister of Agriculture and Food, reviews research programs in agriculture, veterinary medicine, and household science. It determines whether the objectives, facilities, and staff meet the needs of Ontario agriculture and makes recommendations accordingly.

The institute is primarily concerned with research conducted by the Ministry of Agriculture and Food, which includes animal production, field and horticultural crops, pest management and disease control, soil, water, and waste management, food, engineering, and economics. Within the ministry, there are nine centers where research is conducted. These are: Agricultural Laboratory Services, Centralia College of Agricultural Technology, Economics Branch, Horticultural Research Institute of Ontario, Kemptville College of Agricultural Technology, New Liskeard College of Agricultural Technology, and Ridgetown College of Agricultural Technology. The 5 experimental stations at Arkell, Cambridge, Elora, Guelph, and Woodstock are managed by the University of Guelph under contract with the ministry.

To coordinate research efforts, ARIO members visit commercial and federal government research facilities in Ontario, as well as facilities at universities in bordering states of the United States.

Under the act, the institute may accept grants or donations of monies for research. Such funding is usually from commercial sources and is used for specific projects. While it represents a small percentage in relation to funding from government sources, it is nevertheless increasing.

BUDGET
Allocation of Funds for Research 1982-83

	Ontario Government Funding	*Grants, Donations*
Capital Costs, Fruit and Vegetable Storage Research	$ 1,100,000	
Centralia College	120,600	
Energy Centre	1,270,400	
Guelph Agricultural Centre	2,743,200	2,068
Horticultural Research Institute	2,703,400	158,099
Kemptville College	2,235,700	38,935
New Liskeard College	601,100	18,656
Provincial Lottery Awards	1,850,000*	
Ridgetown College	1,814,100	151,346
University of Guelph	16,530,000	219,734
	$30,968,500	$588,838

*Later reduced to $1,252,800.

Contents

Research Highlights

Animal Production and Health 1
  Beef 1
  Dairy 2
  Swine 3
  Sheep 3
  Poultry 4
  Fish 4
Field Crops 4
  Grain 4
  Forage 5
  Protein & Oilseed 5
Horticultural Crops 6
  Vegetable 6
  Ornamental 8
  Fruit 9
Pest Management and Disease Control 11
Soil and Water Management 13
Waste Management 14
Food 14
Engineering 15
Economics 16
Bibliography 17
Inventory of Agricultural Research Projects 65

Animal Production and Health

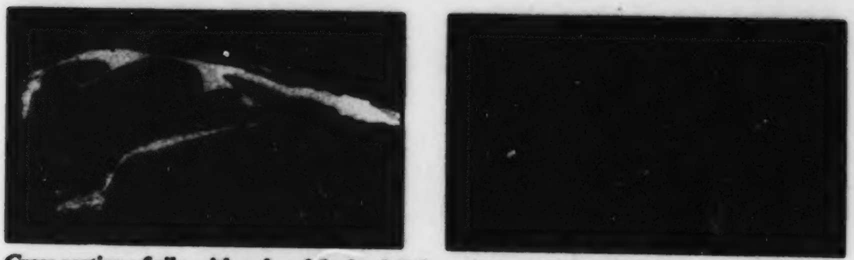
BEEF:

Lower fat levels cut feed costs

Beef fat is an essential requirement for the best market grades of beef. At present, the average beef carcass in Ontario contains approximately 77 kilograms of fat. Current research suggests, however, that fat levels as low as 45 kilograms do not reduce meat palatability. This could result in a feed saving of 22.7 kilograms per market animal. As approximately 800,000 cattle are finished for market in Ontario annually, reduced fat requirements could result in a gross saving of 398 million tonnes of feed a year, or $40 million. In light of this research, grade standards for beef carcasses are under revision. UG

New growth promotant both efficient and economical

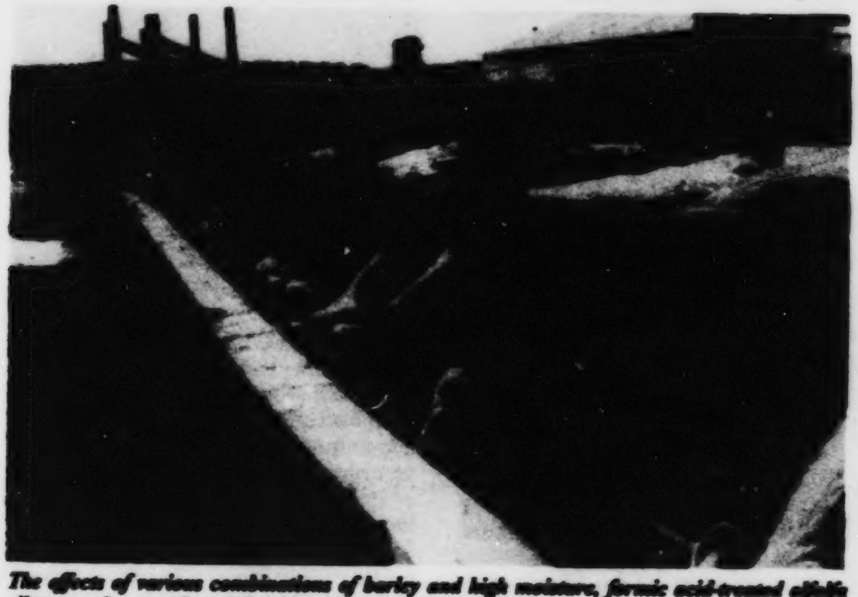
The growth promotant Compudose is being evaluated for implantation in feeder cattle. Initial findings indicate the compound stimulates growth in cattle by 10 percent and eliminates the need to reimplant animals with growth promotants currently available, as there is no withdrawal time before marketing. It is calculated that the widespread use of Compudose will result in a $4 million saving to the Ontario beef industry. UG



Cross-section of ribs with reduced fat level (left) and comparable palatability to standard A1 carcass (right) with higher fat level will mean lower feed costs for farmers and equal appeal to consumers.

New feedlot practices safeguard young cattle

Early reports from feedlot operators indicate that the adoption of new management practices can reduce the death rate of young cattle by approximately 50 percent. These recommendations are the result of the Bruce County Feedlot Study, a 3-year project designed to identify management and disease prevention procedures. Operators are advised to: a) introduce corn silage very slowly during the first two weeks; b) avoid the use of vaccines to combat respiratory disease during this time; and c) not mix cattle purchased from several sources for the first 3 weeks. These simple procedures involve no capital outlay, yet result in substantial savings. UG



The effects of various combinations of barley and high moisture, formic acid-treated alfalfa silage on the growth and finishing of beef cattle are being evaluated in feeding trials at New Liskeard.

Heavy calf technology increases sales

The development of a preconditioning program for heavy calf production is largely responsible for lower costs and the increased number of heavy calves being brought on the market. The preconditioning program included early weaning and transfer to a heavy calf diet, and the use of hormonal implants and growth-promoting antibiotics. Under the program, calves improved average daily gains and feed conversion by 39.9 and 15.7 percent, respectively. Between 1979 and 1982, the number of heavy calves sold at the Toronto Stockyards rose from 27,000 to 35,000 head. KCAT

Scientists isolate cause of cattle disease

Ontario scientists have recently linked *Haemophilus somnus* with a broad spectrum of beef cattle diseases, including ITEME, mastitis, and pneumonia. Approximately 10 percent of all feedlot pneumonia and 30 percent of calfhood bronchial pneumonia are caused by this organism. It is estimated that loss of life, extra labor, medication, and veterinary fees resulting from these diseases cost the province's farmers in excess of $1 million per year. The recognition of *Haemophilus somnus* as the bacterial agent responsible for these diseases is an important step toward the development of a vaccine, which would result in a 10 to 25 percent reduction of current losses in beef cattle alone. UG

DAIRY:

The benefits of light for lactation

There is increasing evidence that extending the normal daylight hours in winter by lighting dairy buildings improves both growth performance of heifers and milk production in cows. Short periods of 2-hour pulses appear to be as effective as continuous lighting and cut electricity costs by 50 percent. Preliminary evidence also indicates that the new lighting program can affect the time of parturition. If this is so, calving could be programed during the daytime, which would be of great benefit to dairy farmers in reducing post-natal mortality and other complications associated with calving. UG

Fancy white veal more profitable

Researchers have developed an excellent supplement to the skim milk often fed to white veal calves. Veal producers are being advised to supplement skim milk with emulsified fat. Unlike milk replacer, this new diet can be adjusted to meet the specific energy requirements of the calf during the growing period. Calves fed the supplement more than doubled the average daily gains, compared to calves fed exclusively on a skim milk diet. Feed efficiency was improved 17.7 percent. Carcasses of these calves were given higher marks for marbling, tenderness, and acceptability. Cream shippers can also profit from this development, as it gives them an attractive market for their skim milk. KCAT

In addition to reducing flies in dairy cattle operations, ear tags are proving effective in controlling face flies and pink eye in beef and dairy cattle put out to pasture during summer months.

Ear tags control flies in dairy cattle

Effective fly control is necessary for efficient milk production. Ontario field trials indicated that horn flies are totally eliminated and face fly counts reduced by 80 percent through the use of ear tags. Research support of the tags has led to their registration. There is now a great demand from producers for these economical tags, several brands of which are now commercially available. UG

Genetics research increases milking speed, calving ease

Data collection systems have now been developed to determine traits such as milking speed and calving ease in bull proofs. A 50 percent reduction in calving difficulties and a consequent saving of $2.5 million per year could result from this work. This complements other genetics research designed to maximize milk, fat, and protein yields. UG

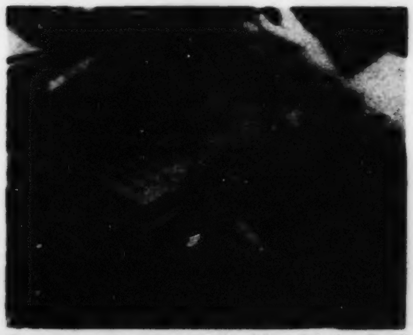
Researchers are shown infecting liners with Staphylococcus aureus, a form of mastitis, to determine the effectiveness of teat dips in controlling infection. Infection rates were reduced by 71 percent in dipped quarters, resulting in the recommendation of the new dips for licensing. Several brands are now commercially available to Ontario producers.

Infertility in dairy cattle reduced

From 10 to 15 percent of dairy cattle are temporarily or permanently infertile. Genital and semen infection by ureaplasma organisms is responsible for one-half of these disorders. Research shows that vaginitis and other related diseases can be controlled or prevented through various measures, including the addition of antibiotics to semen. It is estimated that prevention of this sort could reduce fixed production costs by at least 5 percent. UG

Extra protein in early lactation boosts income

Milk producers can now increase the net value of their cows by $105 each by feeding them extra protein in the early lactation period. By reducing the protein fed in the latter part of lactation, additional savings are possible. The total benefit annually to Ontario dairy producers is calculated at $12 million when this practice is applied throughout the province. UG



Progesterone assay method has 20-day lead over conventional procedure in determining non-pregnancy in dairy cows.

Milk the key in determining pregnancy

The use of an assay to determine the hormone progesterone in milk now allows non-pregnancy in cows to be determined as early as 30 days, as compared to 50 days when determined through palpation. It is calculated that $3 is lost every day that a cow is open for more than 90 days. In 1982, approximately 6,000 samples were assayed for Ontario farmers. Assuming that only one quarter of the total dairy cows in Ontario could be bred 21 days earlier with this procedure, a minimum of $3.1 million would be saved annually. UG

Red veal research yields improved supplement

Holstein male calves were raised to 230 kilograms live weight with the use of a barley-protein supplement. In a feeding period of 150 days, an average daily gain of 1.10 kilograms and a feed conversion of 5.25 kilograms of feed per kilogram of gain were reported. This compares favorably with the use of processed barley, which resulted in an average daily gain of 0.98 kilograms and a feed conversion of 5.85 kilograms of feed per kilogram of gain. The feed cost per kilogram of gain with unprocessed barley was $1.56, and the income per calf over feed costs was $175 based on a market price of $1.88 per kilogram. NLCAT

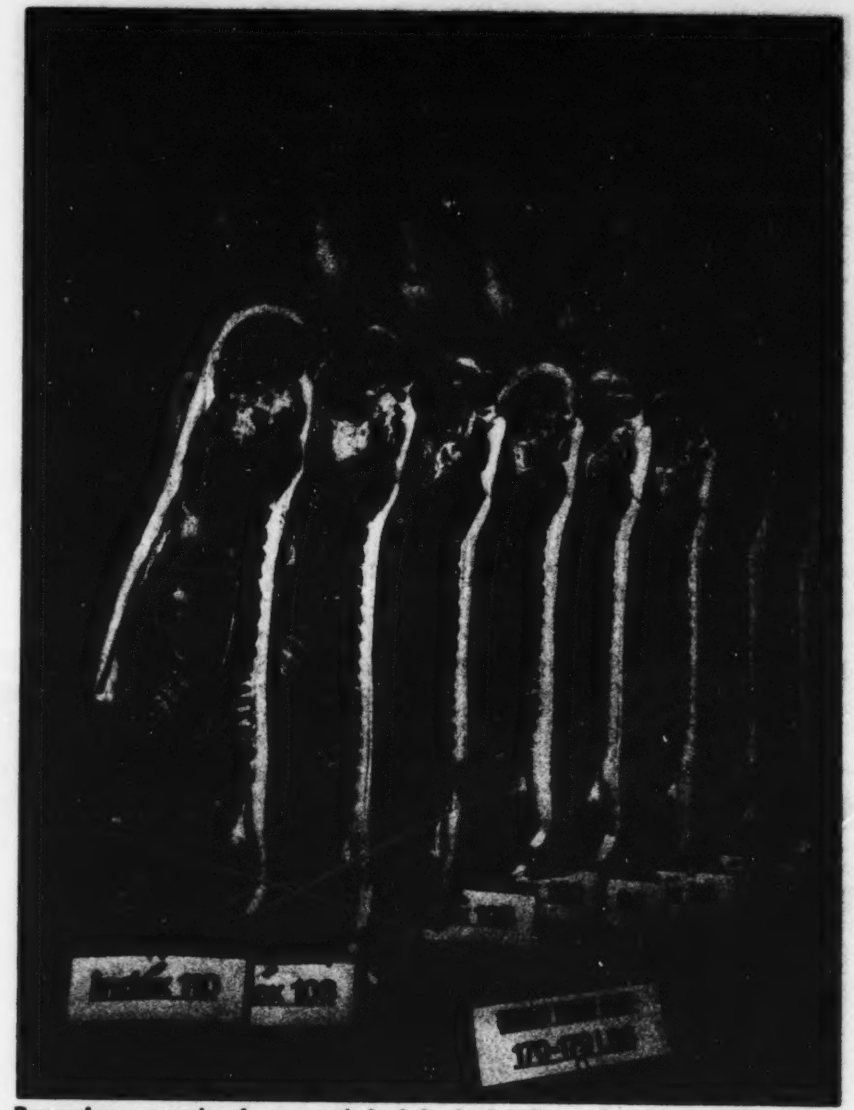
SWINE:

PSS screening broadens hog market

The routine identification of carriers of Porcine Stress Syndrome (PSS) has strengthened Ontario's competitive advantage in pork exports. PSS gives pork a pale, watery appearance, which reduces its acceptability among consumers and importing countries. A refined version of the halothane test can now identify hogs carrying this undesirable genetic trait and is in place in ROP stations across the province. UG

Controlled feeding: leaner carcasses and greater profits

Ontario pork sales in 1982 exceeded $600 million. An important goal of swine research is to increase profitability by promoting greater efficiency in feed utilization. It has been shown that although controlled feeding depresses growth rate, it improves feed conversion and results in leaner carcasses and greater profits. This information has been incorporated into a computer model which will identify the most economical method of feeding. Controlled feeding of pigs will boost profits by 5 to 10 percent over the full feeding method currently in use. RCAT



Researchers are testing the automatic back fat depth indicator for accuracy in hog carcass grading and potential use in large-scale slaughter lines.

Diarrhea prevention in pigs

Diarrhea caused by *Escherichia coli* infection is responsible for a 3 to 5 percent mortality rate among pigs, which results in a $20 million loss in production annually. A vaccine developed at the Ontario Veterinary College has proven effective in reducing this mortality rate by 25 percent. UG

SPF program keeps herds healthy

Enzootic pneumonia adds at least 10 days to the time it takes a pig to reach market weight, which costs the swine industry in excess of $15 million annually. Development of the Specific Pathogen Free (SPF) program, by which piglets are born disease free, has allowed for the successful repopulation of infected herds. UG

SHEEP:

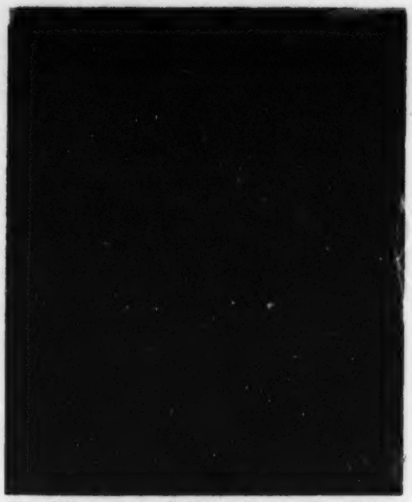
Estrus synchronization of ewes yields many benefits

Among the advantages of synchronized breeding are improved labor efficiency through a reduced lambing season, a more uniform lamb crop, simplified out of season breeding, more efficient use of pregnancy detectors, and the potential development of artificial insemination. Of the 60 ewes implanted with vaginal sponges impregnated with progesterone in a recent trial, 85 percent conceived at first service in natural mating. The resulting lamb crop averaged 1.98 lambs per ewe, and all lambing took place within an 8-day period. NLCAT

POULTRY:

Nutrition studies key to savings

Potential savings of $1.6 million annually could be realized with modifications to protein levels currently being fed to growing pullets. Research into lay hens' calcium appetite has led to a 7 percent reduction in required feed and an estimated annual saving of $9.5 million. Changes in vitamin and mineral content of broiler feeds could result in a 20 percent decline in leg disorders, or an annual saving of $1 million. UG



Nutrition research has led to reduced feed costs for egg production, chiefly through the reduction of excess protein intake.

FISH:

Nutrition research sets standards for fish diets

Methods of diet formulation, vitamins, minerals, and the form of available carbohydrate are major considerations for the success of fish farming in Ontario. Several studies have led to the establishment of required levels of these nutrients, the best type of formulation, and the toxic levels and effects when excessive amounts are fed. Ontario fish farmers have to a large extent adopted these dietary recommendations, thereby minimizing unnecessary losses. UG

Field Crops

GRAIN:

New small grains varieties widely accepted

The small grains plant breeding program at the University of Guelph has been active for many years. A significant number of highly successful varieties owe their existence to this program. These include Perth (released 1974) and Bruce (released 1977), each of which constitutes approximately 50 percent of spring barley hectarage in their region. Elgin and Oxford (released 1974 and 1976, respectively) also constitute approximately 50 percent of the province's hectarage in oats. Recent triticale releases, OAC Wintri (winter) and OAC Triwell (spring) are showing great promise. UG

Haploid breeding multiplies barley varieties

A unique system of breeding barley which reduces both the time and cost in producing new varieties has recently

Developing superior grain crop cultivars for Ontario's livestock and cash crop enterprises is a major goal of grain crops research. The improvement of cultivars for yield, quality, and resistance to lodging, insects, and disease is achieved through hybridization, selection, and germplasm introduction. The adaptability of new selections and the potential of new species for Ontario are evaluated across the province under co-operative testing programs.

been developed. The haploid production procedure can produce pure breeding lines in 2 generations, whereas under normal practice a number of inbreeding generations are required. Thus the period for cultivar development has been considerably reduced from 10 to 12 years, to 6 to 8 years. Another great advantage is that as few as 20 haploids per cross are sufficient to indicate which crosses have the greatest potential, with the knowledge that their genetically controlled factors are fixed and will be identical in future generations. This system is being used effectively by several public and private breeding laboratories in North America and Europe. UG

FORAGE:

Direct-seeded alfalfa increases yields

The hectarage of direct-seeded alfalfa in Eastern Ontario has doubled in the last 2 years as a result of seeding method research. For establishing an alfalfa stand, direct seeding is a superior method to planting with a companion barley crop. In the year following seeding, the direct-seeded alfalfa yield improved by 7 percent. In contrast, direct-seeded red clover yielded approximately the same as red clover seeded with barley. KCAT

Fall management program for alfalfa survival

Crop scientists have recently developed a scheme whereby the critical dates for fall cutting treatment of alfalfa are outlined on a map of the province. This provides Ontario farmers with the information they require for the efficient management of alfalfa stands. Maintenance of productive stands, through proper cutting management, reduces the frequency with which stands must be re-established. UG

Biotechnology, traditional field testing create successful varieties

In recent years, the forage breeding program has been responsible for the release of several highly successful varieties, among them OAC Minto (alfalfa), Ina (orchardgrass), and Maitland (birdsfoot trefoil). This work has, for example, helped form Ontario's role as producer and exporter of birdsfoot trefoil seed, an industry currently valued in excess of $6 million annually. Similarly, forage breeders' efforts have made significant contributions to Ontario's hay and pasture crops, now valued at approximately $175 million annually. Researchers are continuing to produce germplasm for the development of seed stocks with desirable traits such as disease resistance, herbicide tolerance, and specific quality characteristics. Yield and environmental availability continue to be tested in the field. Increasing effort is being directed toward the maintenance and evaluation of lines, prior to their release to growers' associations. UG

PROTEIN & OILSEED:

Shown above are 5-row doubled haploid plots of barley. The haploid technique allows the incorporation of new quality characteristics and resistance to new diseases in 3 to 4 years less time than conventional methods.

Research expands soybean potential

Although a relatively new crop in Western Ontario, soybean hectarage has increased 150 percent in the last 3 years; a further 100 percent increase is predicted for 1983. This expansion has been facilitated, in part, by a wide variety of research studies, including variety testing in the 2600 and 2800 CHU areas. Through research support, 4 varieties—OAC 81-02, OAC 81-06, Pioneer 1282, and Thompson T8106—are in the process of being licensed. CCAT

Promising outlook in peanut production

Work commenced in 1970 to determine the feasibility of commercial peanut production in Southern Ontario. Results from research in variety development, harvesting equipment, and cultural practices are encouraging, although commercial production is small thus far. Potential exists to replace some peanut imports and to stimulate a secondary manufacturing industry for production of harvesting equipment, peanut wagons, and driers. UG

Canola: Northern Ontario cash crop

Canola has the potential to provide a viable alternative to barley and oats as a cash crop for Northern Ontario. Researchers are ensuring that technology adapted to the northern environment is available to producers who are intent on exploiting increased market opportunities. Yield information has been gathered, and the top varieties of Argentine and Polish types have been identified. Production trials on fertilization rates and harvest methods have also been conducted. In 1983, planting intentions in Timiskaming alone totalled 900 hectares.

NLCAT

Field workers harvest soybeans. While Ontario's soybean production was originally confined to the southwest, in the last ten years production has extended steadily to the east and north.

Soybeans for Eastern Ontario

Eastern Ontario has the potential to become a major center of soybean production. Soybean variety development and work on cultural practices are ensuring that this potential is met. The application of several new experimental herbicides at the 1 to 2 leaf stage of growth has resulted in 75 to 100 percent control of annual grasses and quackgrass. Maple Arrow has shown excellent tolerance to Metribuzin. With elevators established to handle the crop and an estimated yield of 2,300 kilograms per hectare, growers are expected to produce 7,000 hectares in 1983. KCAT

Horticultural Crops

VEGETABLE:

Seed potato propagation builds up

The Seed Potato Propagation program was initiated in 1981 to develop propagation techniques for virus-indexed seed potatoes. Tissue cultures, which have been successfully grown in Northern Ontario seed-producing areas in 1982 and 1983, were judged the best way to achieve high rates of propagation. Seed tubers derived from tissue-cultured plants offer the industry a procedure that satisifies federal inspection regulations while facilitating the release of new cultivars. The value of seed planted in Ontario is $3 to $4 million annually. Forty percent is grown in the province.

Tissue culture work has also resulted in the creation of a Seed Potato Upgrading and Distribution unit (SPUD), which will be located at the New Liskeard College of Agricultural Technology. This unit will provide disease-indexed plants and expand the province's seed potato industry. HRIO

Triazine resistance expands rutabagas' role

Researchers report a great deal of grower interest in the development of triazine resistant rutabagas, genotypes of which are currently being selected for seed multiplication. Initial results suggest that chemical control is possible in the pre-emergent stage, thereby eliminating the many problems associated with hand weeding. Control at the preplant incorporated stage also appears possible. These rutabagas do not shed seeds at harvest (eliminating volunteer weeds), and can be used on fields following corn where atrazine residues are a problem, thereby allowing growers to follow up with soybeans in rotation. Triazine resistant rutabagas are a particularly promising crop to growers in northern areas, where the rutabagas could be a feed substitute for corn wherever grain corn cannot be grown.

UG

Above are complete Laurentian rutabagas which are atrazine resistant. This resistant cultivar will be commercially available in the near future.

New potato varieties satisfy industry, consumer needs

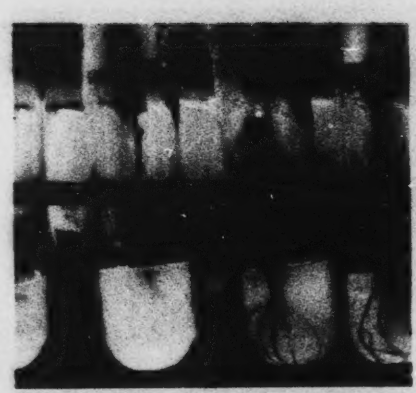
Several promising potato cultivars—Yukon Gold, Conestoga, and Simcoe—have recently been released through the Ontario Breeding Program, a cooperative effort of Agriculture Canada and the Ontario Ministry of Agriculture and Food. Researchers can take particular pride in the development and licensing of Yukon Gold, a prize-winning and highly popular yellow-fleshed potato that is the first such variety to be licensed in Canada. Conestoga is an early maturing chip type which should prove valuable to Ontario processors by allowing chipping directly from the field. Simcoe is a mid-season variety that makes excellent chips both directly from the field and following prolonged storage. UG

Bacterial speck resistant tomatoes

Ontario 7710, the first tomato line to combine resistance to bacterial speck with excellent processing characteristics, was officially released in 1983 and will be available to Ontario growers in the near future. It is used by breeders in the development of bacterial speck resistant processing varieties. Backcrossing into more than 30 percent of the present varieties that are bacterial susceptible is now possible. To date, over 100 seed samples have been sent to tomato breeders in 18 countries. Researchers are confident that commercial varieties developed from this germplasm will help reduce disease-induced losses. A 10 to 15 percent increase in tomato yield is anticipated. In related research, it has been found that copper sprays do not reduce the incidence of speck, as initially thought. This has resulted in spraying cost savings of $500,000. RCAT, HRIO

New green pepper cultivars recommended

New green pepper cultivars recommended for use by growers over the past 3 years include Lady Bell, Super Set, Clovis, and Gedeon. These have been evaluated for fruit size and type, earliness, and yield. Researchers have also found that seed soaked in a dilute salt solution enjoyed a 6-day advantage, approximately, in emergence over untreated seed. This is of significant value in the production of greenhouse-raised transplants. HRIO



The successful growth of tissue-culture potato cultivars in Northern Ontario's seed producing areas has led to the creation of a Seed Potato Upgrading and Distribution (SPUD) unit, to be located at New Liskeard.

Mechanical harvesting gains favor with processing tomato industry

The $50 million processing tomato industry has benefitted greatly from varietal and cultural practices trials. These have been instrumental in promoting the use of raised beds and mechanical harvesting technology. At present, 3,500 to 10,000 hectares in tomatoes are mechanically harvested, representing a three-fold increase in as many years. RCAT

Improved handling methods for asparagus

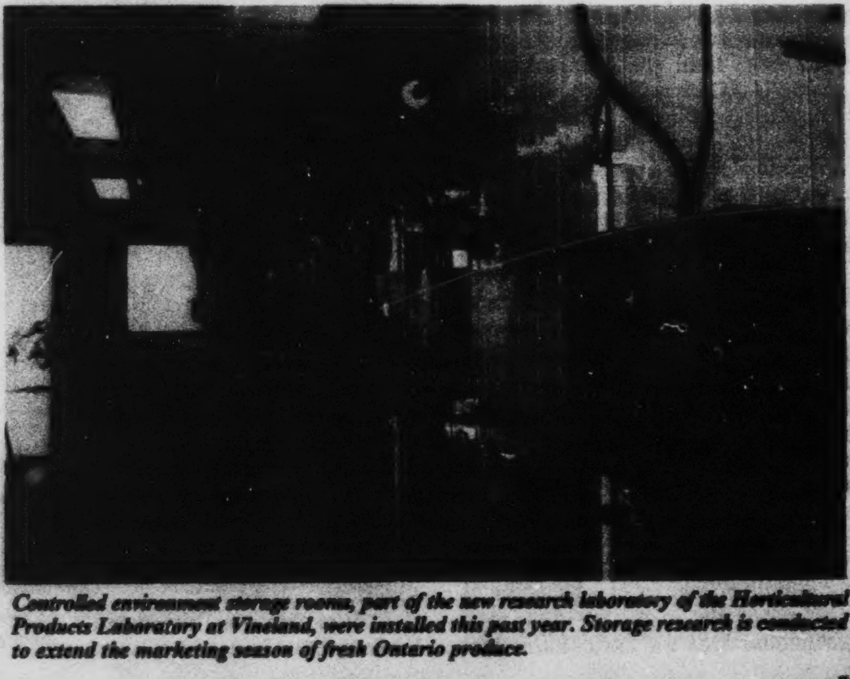
To minimize moisture loss in the storage and shipping of asparagus, wet pads in shipping containers have been introduced. In most instances, the pads reduced moisture loss and increased asparagus weight during cooling and storage. As a result of this research, the asparagus industry went from using no pads in 1982 to regular use in 1983. Research has also found that weight gain increases if asparagus is hydrocooled. For storage periods of up to 2 weeks, hydrocooled asparagus was rated superior in taste tests to conventionally cooled asparagus. HRIO

Celery storage research extends marketing period

As a result of celery storage research, celery growers will be able to extend their marketing period by 50 percent. Although celery has not commonly been stored in Ontario, recent studies have shown that it can be stored for up to 2 months without a significant loss in quality. The use of controlled atmospheric conditions further extends the marketing season for Ontario-grown celery, thereby allowing greater import replacement. HRIO

Tomato hybrids reduce labor and energy costs

Standard greenhouse tomato hybrids do not set fruit well when grown at night temperatures below 18°C. Since 1980, however, 33 hybrids have been developed that set fruit at night temperatures as low as 12°C and require minimal vibration for adequate pollination. In addition, these hybrids have acceptable commercial size, quality,



Controlled environment storage rooms, part of the new research laboratory of the Horticultural Products Laboratory at Vineland, were installed this past year. Storage research is conducted to extend the marketing season of fresh Ontario produce.

firmness, and crack resistance. Extensive tests have shown that many of these hybrids perform better than available hybrids at low temperatures, while saving both the labor and energy costs associated with the commerical production of greenhouse tomatoes. Acceptance by growers and commercial seed producers has been excellent. HRIO

Shallow planting, close row spacing increase asparagus yields

A 6-year trial on the effect of direct seeding asparagus at different depths has proven the merits of shallow planting. A $13,000 increase in yield per hectare was realized at a depth of 10 centimeters in comparision with the 20 centimeters depth of commercial seedings. Shallow planting, which eliminates the need to excavate deep trenches, allows rows to be planted closer together. Related research has demonstrated that asparagus yield increases with denser plant population. HRIO

Fuel efficient evaporator cuts maple costs

Fuel accounts for 35 percent of the cost of producing a liter of maple syrup. A recently developed fuel efficient evaporator, the Economizer, can reduce energy costs by 40 percent. Whereas a standard evaporator loses 85 percent of its energy in the waste steam through its stacks, the Economizer uses this steam in boiling the sap alongside an existing maple sap evaporator. This represents a significant savings to an industry currently valued at $4.5 million. KCAT

Quality in sap collection is a key factor in determining the flavor and color of pure maple syrup.

ORNAMENTAL:

Conserving energy in the greenhouse

Conservation technology now being implemented by commercial growers is designed to reduce total annual greenhouse energy consumption in the province by an estimated 10 percent or $2 million. Thermal blankets in greenhouses have become particularly useful to growers, as they serve the dual purpose of energy conservation and photoperiodic control or sunshading. It is estimated that 25 percent of the total greenhouse area for floricultural production has been equipped with movable blankets. The savings in fuel from the curtains alone could represent $1 million annually. HRIO

New ornamentals

Tissue culturing of Syringa Vesper, a recent lilac introduction, has enabled distribution on a wide scale to nurseries, botanical gardens, and arboreta. Plants have been shipped to English and Dutch, as well as Canadian and American, nurseries.

A rhododendron introduction, R. Vivacious, has been widely accepted as one of the best true red rhododendrons. The first yellow evergreen form, which is sufficiently hardy for Southern Ontario, has also been introduced. HRIO

Ontario-grown african violets

Economical commercial propagation techniques for african violets are now available as a result of micropropagation research. The new technology has helped make possible a $300,000 private sector facility in Mississauga which is producing 4 million plants annually using tissue culture propagation. Test tube plants require minimum space and are easily transportable. Total import replacement of african violet plants is anticipated, as is an expanded export market to the United States. UG

Lamps brighten future for rose, chrysanthemum growers

The application of high pressure sodium lamps in the production of commercial flower crops has been a great boon to the province's winter flower industry. This Ontario-developed procedure, which currently accounts for one half of the province's annual rose crop, has reduced plant production costs by $24,700 per hectare, while increasing plant volume by 50 to 100 per cent. From 1975 to 1979, the lighting scheme reduced imported cuttings of chrysanthemums by 27 million. UG

Reconstructed research greenhouses at Vineland facilitate studies in energy conservation and production in a variety of vegetable and floriculture crops.

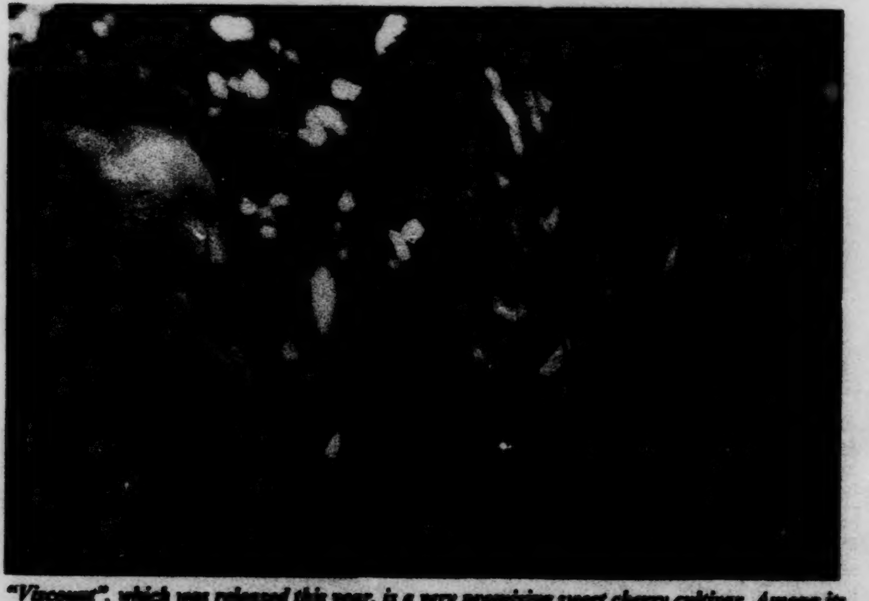
FRUIT:

New fruit cultivars popular with growers

Through Ontario breeding research, Viscount, a sweet cherry cultivar, was named this year. This new cultivar resembles the popular sweet Bing cherry but, unlike Bing, is highly resistant to rain-induced cracking. It is expected that Viscount will supersede Bing as the third most important sweet cherry in the province.

Vanier, a late season, bright red, medium-sized Japanese plum was also named this year. Is is expected that this cultivar, along with 5 blue European plum selections which have been released for commercial testing, will replace imported plums in August, the peak month for plum imports into Ontario. This could represent significant savings, as the value of imported plums in August alone is approximately $2 million; the annual value, $7.5 million.

Two new grape cultivars were released to the commercial market in 1983: Vivant and Vanessa Seedless. Vivant is a white cultivar suitable for high quality white wine and is hardier than the highest quality cultivars. This cultivar has been well received by the wine industry, which was anxious for sturdy light-charactered cultivars. Between 1981 and 1982, 6,300 vines were sold commercially; in 1983, an estimated 8,000. Vanessa Seedless has proven itself popular with fresh grape growers, who had expressed a need for hardy, locally grown red seedless grapes. Between 1981 and 1982, 2,200 vines were sold commercially and approximately 3,800 were sold in 1983. HRIO



"Viscount", which was released this year, is a very promising sweet cherry cultivar. Among its advantages is its resistance to rain-induced cracking.

Quality standards for wine grapes established

A computer-based system has been developed to provide the province's grape and wine industry with a quality analysis of the commercial grape crop. This has resulted in an annual publication, *Ontario Grape Crush Analysis*, which provides a framework for negotiating wine grape standards and an official method to prepare and measure grape samples for sugar quality.

HRIO

Eastern Ontario's blueberry crop intensified

Lowbush blueberries are an increasingly popular crop in Eastern Ontario. The 1982 level of 13 hectares per commercial farm is expected to increase by 6 hectares annually until 1988. Crop yield, which in 1982 was 2,000 kilograms per hectare, is expected to double this year. Recent trials have shown that plants respond well to the addition of NPK. Sulphur has been used to lower the pH. Two highbush blueberry cultivars, Northland and Patriot, have shown promise and should be in commercial production by 1986. The 1990 value of the crop is calculated to be $500,000. KCAT

Equation developed to predict peach harvest

A continuing peach program has yielded data for developing an equation to predict first harvest dates for Early Red, Red Haven, and Loring. This equation is being used to provide shippers and wholesalers with key cultivar harvest dates, which, in turn, allows chain stores to synchronize promotional material. A comparison of forced-air, hydro, and conventional cooling methods indicates that some peach cultivars do not respond to hydrocooling. Where rapid cooling of peaches is required, forced-air cooling has been found to be preferable. HRIO

Calcium chelates improve apple storage

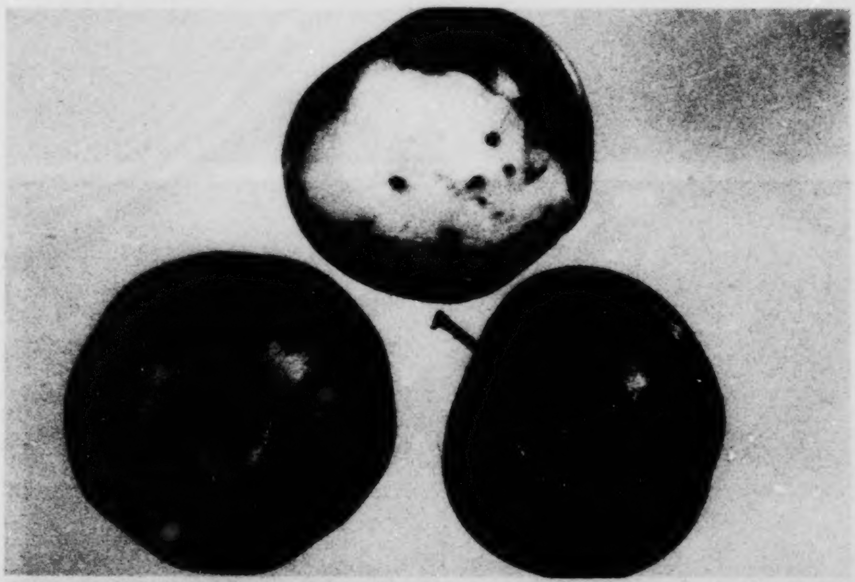
Calcium applications to fruit reduce losses in storage from bitterpit and breakdown, although calcium chloride burns foliage if applied at a high temperature or at too high a concentration. Recently available calcium chelates, however, cause no foliage burning and can be mixed with pesticides, and therefore applied in a regular spray program. These chelates are approximately 5 times as effective as calcium chloride. Apple growers are using chelates to correct both calcium and magnesium deficiencies. HRIO

Research fosters homegrown strawberries for processing

A project designed to increase strawberry production for processing has as its goal the displacement of 80 percent of frozen strawberries by domestic product within a decade. To this end, 6 hectares have been planted on commercial farms in the Blenheim and Simcoe areas. These plantings will facilitate comparative studies of hand to machine harvesting, matted row to solid beds, once-over to multiple harvests, and machine harvest evaluation of 14 cultivars.

An experimental freezing line installed in 1982 has processed 8,000 kilograms of strawberries. Together with a second line installed this year, 150 different varieties and selections have been frozen and evaluated. "Individual quick frozen" fruit was judged superior to fruit packed in sugar. Of the 17 manufacturers of jam and dessert products who tested frozen samples, all judged at least 1 variety comparable to imported strawberries. HRIO

Shown here is an experimental strawberry harvester. The development of an effective harvester and accompanying processing plant equipment is one of the goals of the Processing Strawberry Research Program, devised to establish a processing strawberry industry in Ontario. The program is a co-operative effort of industry, Agriculture Canada, and the Ontario Ministry of Agriculture and Food.



Researchers have found that losses from bitterpit, a storage disorder in apples, can be reduced by sprays of calcium as fruit develops.

New techniques in apple orchard management

The induction of lateral branches for framework building in spur-type apple trees has been evaluated in recent years. Details regarding growth regulator application, timing, and dose have been analyzed with the use of 6-benzyladenine or Promalin. Preliminary results suggest yield increases may be observed in the second year following treatment. On the basis of this research, a private laboratory has secured a temporary permit to use Promalin and formulated 6-benzyladenine on non-bearing trees in selected orchards this year. HRIO

Pest Management and Disease Control

Integrated Pest Management

Environmental biologists and meteorologists have worked cooperatively over the last 10 years to reduce pesticide application frequency in different fruit and vegetable crops. Conventional spray programs often called for pesticide applications as least once every week. The weather-based integrated pest control research programs carried out in the most intensive apple and vegetable growing regions have reduced the required number of sprays by as much as 60 percent, depending on the crop and pest involved. Seventy percent of the province's apple hectarage alone is under this system, resulting in savings in excess of $1 million annually and a reduction in insecticide use by 30 percent. Carrot and onion growers have enjoyed a 40 percent reduction and a consequent saving of $.5 million.

In addition to cost savings in terms of labor, materials, and equipment depreciation, the program increases the useful life of a pesticide by delaying resistance development. A high quality of produce is maintained, even as adverse effects on the environment are minimized.

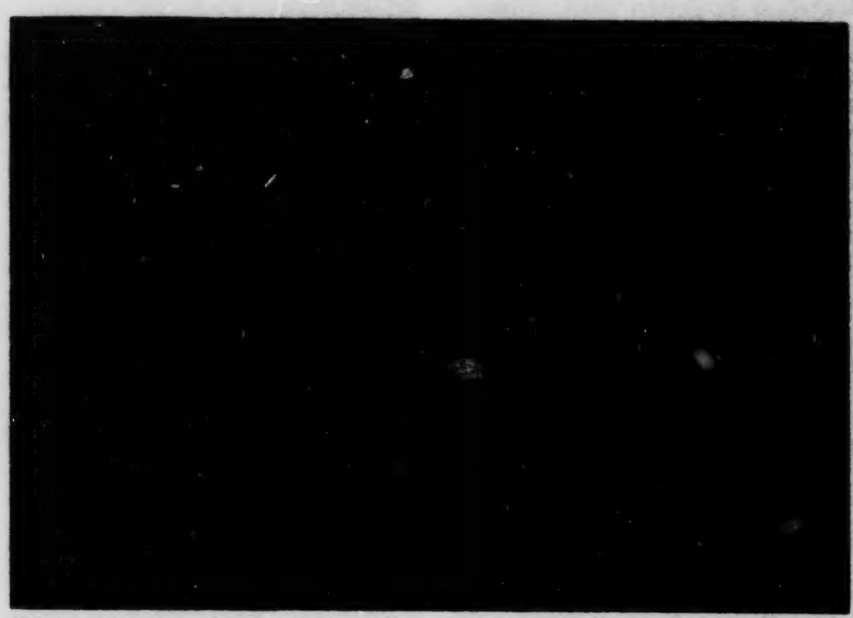
UG

Insecticides registered to combat European corn borer

The European corn borer has caused extensive damage in field corn, sweet corn, peppers, and snapbeans. In 1982, an insect-rearing facility was established which provides egg masses for controlled infestations of the borer. Egg mass availability makes it possible to screen new corn varieties for resistance to the insect. Monitoring by black light and other traps is also possible and can reduce crop spraying costs by approximately $70 per hectare annually. This saving is significant, as the province has approximately 1,000 hectares in pepper production at an estimated value of $5 million. Research results have also been effective in registering new insecticides, such as Decis, for better control of the European corn borer.

RCAT

The European corn borer, shown above in adult form, is a serious pest affecting sweet corn, peppers, and snapbeans. An insect-rearing facility at Ridgetown allows controlled infestations on test plots for the development of efficient spray programs and the screening of new varieties of affected crops for borer resistance.



This is a device for monitoring air-borne spores that cause foliar diseases in onions. The spore trap helps determine what time of day diseased spores are released.

Tomato seed treatment eliminates bacteria

Environmental biologists have devised a method of tomato seed treatment that eliminates seed-borne bacteria and the need for extensive disease control practices after transplants are set in the field. This is a major breakthrough, as there is a shortage of effective and environmentally safe chemicals for use against bacterial diseases in Southern Ontario's field tomatoes. The method involves fermenting the tomato pulp and encouraging the development of microorganisms which produce antibiotics. The antibiotics in turn eliminate the seed-borne disease agents. This method particularly benefits breeders who wish to produce disease-free seed in their new and often rare breeding lines of processing tomatoes. The reduction of diseased fruit also improves recovery in processing plants. By eradicating the 2 percent loss incurred by bacterial diseases, the province's farmgate value of processing tomatoes will be increased by at least $1 million annually.

UG

Late blight control in potatoes

Following 4 applications of metalaxyl to potato foliage, it was found that residues in tubers were sufficiently high to protect tubers against late blight. Research suggests these protective effects could persist for 120 days, thereby extending storage life.

ALS

Improved pesticides for lettuce and celery

The search for safe and effective insecticides and fungicides to control major lettuce and celery pests has led to improved registrations. Residue levels of such pesticides as endosulfan, metalaxyl, parathion, pyrethroid insecticides, maneb, and zineb have been monitored. As a result of this work, recommendations and label modifications have been made to ensure maximum pesticide efficacy for these minor hectarage crops.

ALS

New control methods for growers

Research has supported the recent registration of Poast, a postemergence herbicide, for the control of annual grasses in soybeans. Blazer, another postemergence herbicide recently registered in soybeans, controls many broadleaved weeds previously difficult to control, such as nightshade, bindweed, thistles, and numerous other weeds. The most recent registration is the use of reduced rates of Roundup for quackgrass control. Its acceptance has already resulted in an estimated saving of $1.5 million to Ontario farmers.

Recently, the presence of 3 problem insects—the variegated cutworm and aphid in tomatoes and the corn borer in snapbeans—required immediate retaliatory action. As a result of researchers' support, 2 insecticides received emergency registration. RCAT

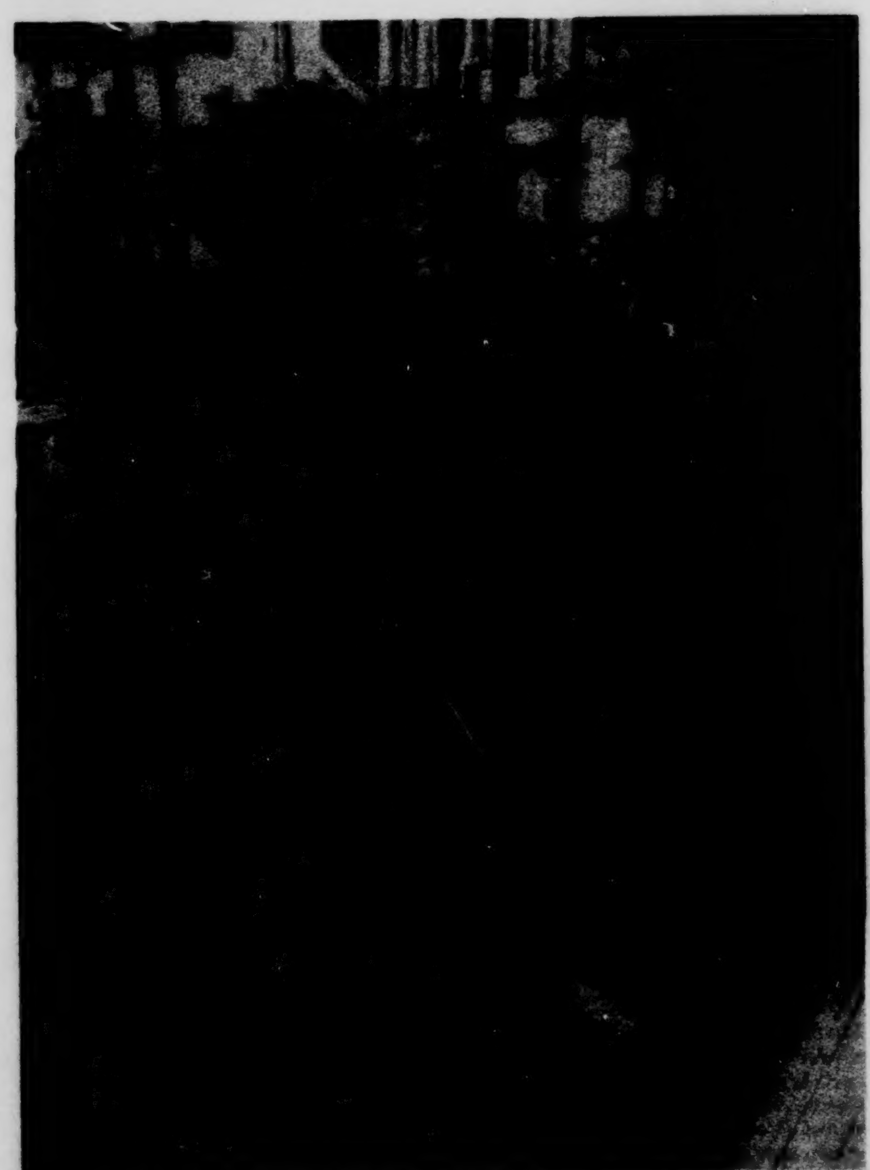
Breakthrough for weed control in vegetable crops

Two new postemergence herbicides, sethoxydim and flauzifopbutyl, have been extensively evaluated on a wide range of vegetable crops. To date, these products have given excellent annual and perennial grass control with no crop injury. The availability of these products to vegetable growers in the near future will be a major breakthrough in weed control in vegetable crops. This is particularly true of perennial crops such as asparagus, where the accumulation of annual and perennial grasses can seriously limit yield. Field Horsetail, which is a serious problem in many crops, has been successfully controlled in asparagus with high rates of amitrol applied after harvest. Other promising new herbicide treatments include linuron and metribusin in new plantings of asparagus, alachlor and metholachlor in cole crops and peppers, ethalfluralin in cucumbers, oxyfluorfen in onions, and napropamide in tomatoes. HRIO

Cereal leaf beetle checked by biological control

In the 1970s, the cereal leaf beetle invaded Ontario from the United States, threatening 10,000 hectares of oats with near total loss. Growers were faced with hefty expenditures of $25 per hectare if insecticides were to be used. Biological control proved, however, a more efficient and economical means.

Weed control studies in soybeans recently led to the registration of new postemergence herbicides.



Lab technician is shown purifying herbicide extracts from tomato plants for residue testing.

The introduction of the small parasitic wasp, *tetrastichus julis*, successfully averted serious loss and is saving in excess of $1 million in sprays annually. UG

Precise application timing controls apple scab

It is only through the precisely timed application of fungicides that apple scab, the major disease threatening Ontario's apple industry, can be controlled. Precise application timing is based on the measurement of weather variables and disease development. The analysis of historical records of ascospore development and associated weather for selected districts throughout Ontario over a decade has led to the development of models which predicted first, midway, and complete ascospore discharge. Use of these models by growers should result in more precisely timed fungicide applications and a reduced use of pesticides. UG

New insecticides and IPM crack down on mushroom pests

Provincial research has provided for the registration of the insecticides Apex and Mushroom Flydust or Pyrenone for use in Canada's mushroom industry. These pesticides, when used in conjunction with an integrated pest management system, reduced provincial crop losses due to insects by an estimated $2.5 million in 1982. HRIO

Verticillium-wilt resistance in alfalfa and mildew resistance in wheat are evaluated in special cement-enclosed micro plots at the Arkell Research Station.

Precise application timing, a method that uses weather data and records of previous disease development to predict ascospore discharge, is helping growers control apple scab and minimize spraying costs.

Soil and Water Management

Spring application of nitrogen fertilizer better

It is now known that urea fertilizer is more effective when applied in the spring, rather than in the fall. Corn plots on sandy and clay soils yielded 16 and 5 percent more, respectively.

It had earlier been thought that corn hybrids react differently to nitrogen. Tests failed to confirm this, however. Five hybrids were evaluated, and all were found to respond equally well to the nitrogen. KCAT

Soil substitutes for vegetable growers

The use of substrates other than soil is of increasing interest to vegetable growers. Cropping of cucumbers on rockwool and oasis has been developed during the 3 cropping seasons, and recommendations for this technique are now being formulated. At present, only 3 to 5 percent of the production area uses peatbags, rockwool, sawdust, or other mixtures. However, it is forecast that the use of soil substitutes will spread rapidly. HRIO

Fruit growers increase yields through trickle irrigation

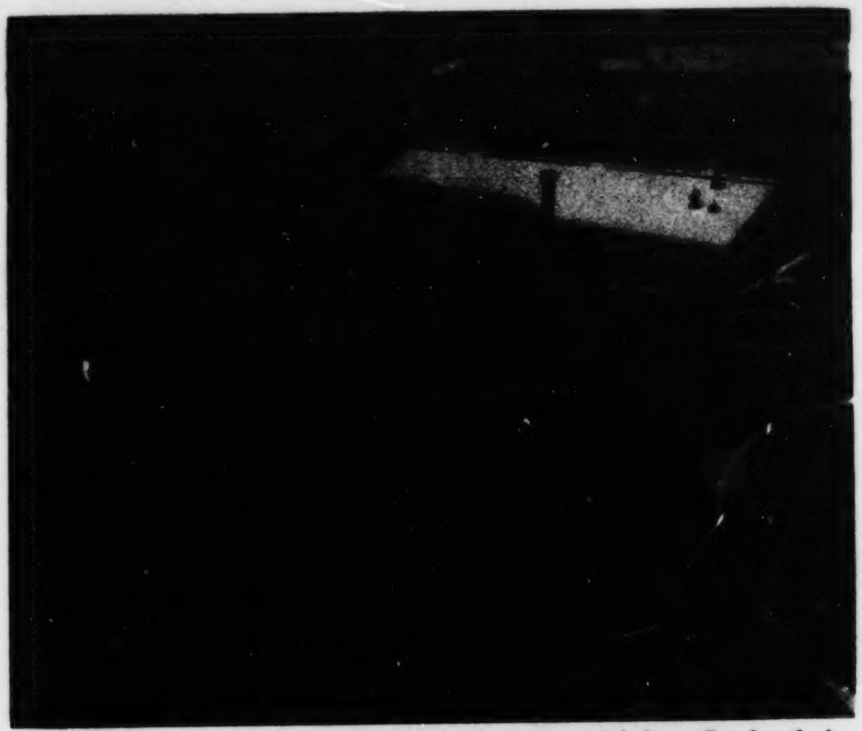
Trickle irrigation is highly popular with the province's fruit growers. An estimated 500 hectares of orchards and vineyards are now irrigated in this way. Yield increases of grapes of up to 40 percent in dry years have been reported; blueberry yield increases have been even greater. Pear and Delicious apple size has been increased, resulting in better grade and greater return for the fruit. Fewer split pit and less canker and winter injury have been observed with peaches. HRIO

Legume forages as plowdown conserve soil

The use of legume forages as a plowdown crop in cereals is becoming a common practice in Central Ontario. Recent trials have demonstrated the beneficial effects of 8 forage species or mixtures on succeeding crops of corn. At least 80 percent of the spring and winter cereals in the Huron and Perth counties area are now seeded down with legume for hay or plowdown. This practice is expected to gain wide acceptance across the province. CCAT

Waste Management

Methane gas: natural, renewable, on-farm energy source



This bird's-eye view of methane research facilities shows the south-facing wall and roof solar collector surfaces on the methane research building at Arkell. Deflated gas storage bag is in foreground, large liquid manure storage tank is to the right, and the Engineering swine research building is behind the methane building.

Making the production of methane gas an integral part of livestock operations is an important goal of Ontario's waste management research. To this end, two farm-scale digesters have been constructed for comparing the performance of a plug-flow anaerobic digester with a conventional, intermittent-mix anaerobic digester, using pig manure as the initial feedstock. The efficiencies of using the gas in the form of heat energy, and of converting it into electrical energy, are being evaluated. Thus far, it has been shown that odor potential for livestock farms can be significantly reduced. Also, with the exception of organic matter, the amount of original plant nutrients (N, P, K, etc.) present in the raw manure remains relatively constant in the effluent from the digester. While researchers refine the operating procedures for future on-farm application, it is clear that methane gas production can provide a natural, renewable, and relatively pollution-free source of energy to the farm community.

UG

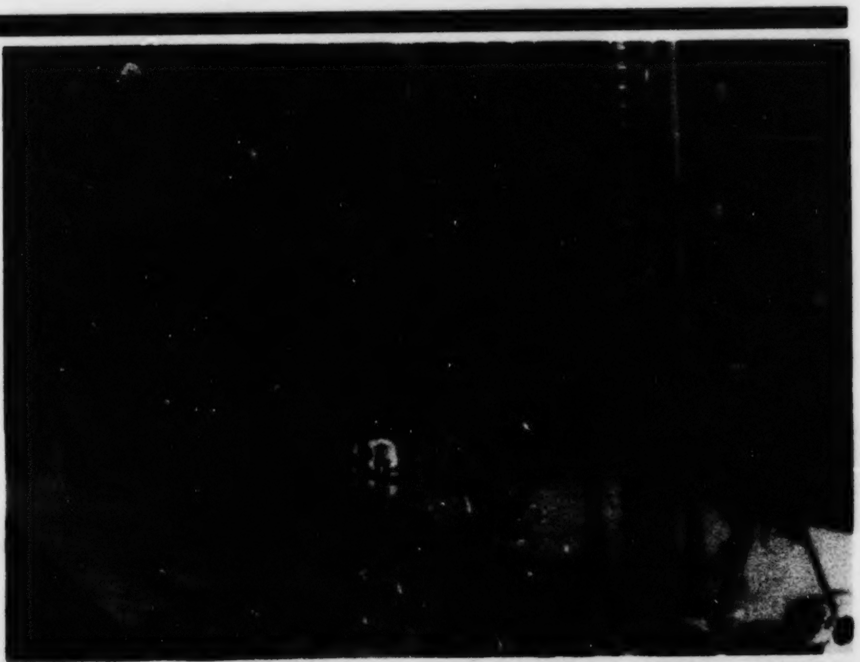
Food

Fuel efficient cleaning of milking systems

Rapidly rising energy costs prompted a study of the feasibility of low temperature cleaning of pipeline milking systems. A specially formulated cleanser for low temperature cleaning of this equipment has now been developed that maintains milk quality levels comparable to those of standard high temperature cleaning. The net benefit is a reduction of energy costs for heating water on the farm.

UG

New uses for wine by-product



Shown here are some of the wine laboratory apparatuses used in food color extraction from grape pomace.

Pomace, the residue left after pressing grapes, is discarded as mulch in the vineyard or at waste disposal sites. Research has identified valuable components in pomace, such as pigments, oil, and sugar. The most valuable of these, the anthocyanin pigment from blue grapes, can be used as a natural food colorant in acidic foods such as soft drinks, beverages, jams, jellies, and pie fillings. Because of growing concern over the use of synthetic food dyes, there is an expanding market for grape pomace, the cheapest and most available source of natural colorants. It is estimated that $2 million worth of grape pigment will be recovered annually. A pilot scale process to recover the anthocyanin pigment has been installed in an Ontario distillery.

HRIO

Domestic oats compete with imported rice

Home-grown hull-less oats have the potential to compete with imported rice for some of the domestic market. Although oats have nutritional advantages over other grains, the milling process is difficult, and the product is perceived to have a tough, chewy texture. A variety of hull-less oats has now been developed which does not require milling, and new methods of low temperature cooking have been found to improve texture. A marketing program for the grain is currently being established. KCAT

Improvements in candy apple processing

Candy apple manufacturers have found that when stored apples are used, the candy blisters when gases from the fruit expand between the surface of the fruit and the hot candy coating. The problem can now be solved by a vacuum evacuation applied before the apples are coated. Manufacturers of candy apples are expected to sell an extra 10,000 kilograms of fruit annually due to this innovation. HRIO

New processing technology will be a boon to candy apple manufacturers.

Aspartame to replace imported sucrose

Aspartame, an artificial sweetener, can be used in conjunction with corn sweeteners from Ontario-grown corn to replace imported sucrose in the manufacture of ice cream. As aspartame can be stored satisfactorily at high temperatures, energy costs are reduced. UG

New curing methods for cheddar cheese

Recent research has shown that late gas-blowing and flavor deterioration can be prevented in cheddar cheese by curing it at temperatures below 5°C. A higher quality cheddar cheese, which means the potential for greater sales both home and abroad, results from this new curing method. UG

Domestic cheese maufacturing on the increase

A method of manufacturing Queso Blanco cheese from skim milk powder, a surplus product in Canada, has been adopted for commercial use in Ontario. It is anticipated that this domestically produced cheese will reduce our reliance on imported varieties and provide export opportunities to Latin and South America. UG

Engineering

Erosion rainfall simulator prompts progressive soil management

Engineers have developed an erosion rainfall simulator that identifies erosion-prone soils. The simulator, which eliminates the problem of weather-variable field testing, allows for the precise evaluation of surface soil conditions and their susceptibility to erosion. Widespread use of the simulator will lead to new recommendations for prudent cultivation practices and improved soil protection throughout the year. UG

New drying methods, supplements preserve high moisture corn

Research has been conducted on the preservation and use of high moisture corn by swine. New techniques in natural air grain corn drying tested at the University of Guelph can now reduce drying costs by $4.5 to $7 per tonne which translates into an annual saving of approximately $4 million for the swine industry.

To compensate for the loss of vitamin E during storage, researchers have developed suitable supplements of selenium and vitamin E. It is calculated that the addition of these supplements will result in the saving of 80,000 pigs per year, or approximately $4 million.

UG

This tractor is operating on a diesel fuel/vegetable oil mixture at the Elora Research Station. Research is underway to determine the long-term effects on engines. Canola is the leading contender in Ontario as a diesel fuel extender.

Economics

Sheep and lamb producers advised of opportunities

Extension personnel are using a recent sheep industry study which documents the position of Ontario sheep production in Canada to counsel both existing and potential producers. The report reviews trends in consumption, imports, and wool production and shows that the number of sheep and lambs on Ontario farms has increased steadily to 251,250 head, or 96 percent, since 1976. Budgeted costs and returns for 1979 conditions showed positive returns to labor, risk, and management.

EC

Market analysis improves producer returns

Considerable work has been done in developing models for predicting prices and other changes in the markets for livestock and grains. Various methods of selling corn and soybeans, including sales at harvest, forward contracting, and hedging, have been compared and evaluated in terms of their effect on the level and stability of farmers' returns. This research indicates that the method used to price corn and the method used to time pricing decisions have major impacts on producers' returns and stability of returns.

UG

Commodity groups assisted in crop budget planning

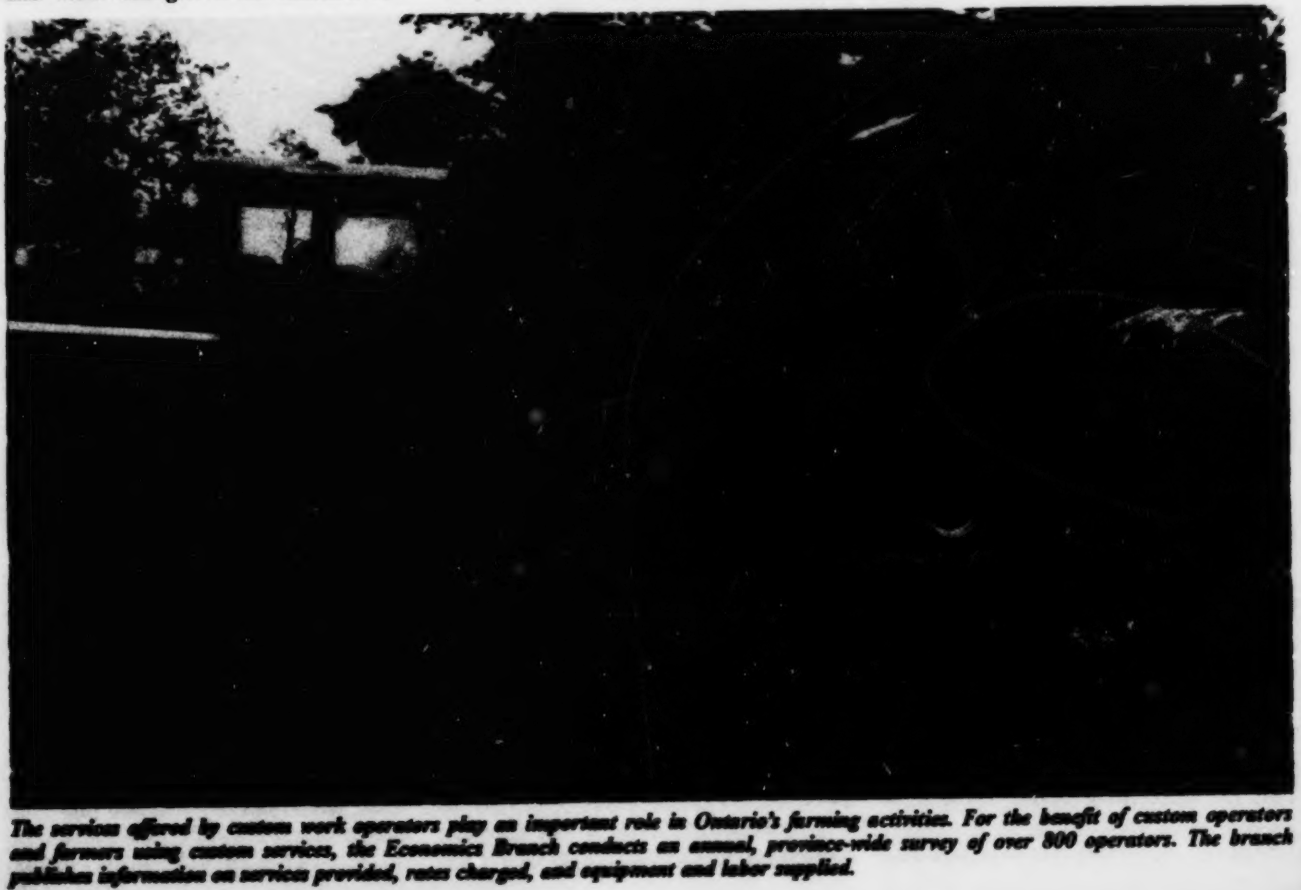
A crop budget generator program has been created to allow the timely and consistent development of crop budgets. To date, the computer program has been used to develop budgets for potatoes and white beans and will be used for more crops in the future. Data files, which are maintained and updated by OMAF economists, are kept on the machinery, materials, and operations of a typical enterprise. Users may alter this information to suit their requirements and to evaluate the effects these factors have on expected costs.

EC

Outstanding rates of return from agricultural investment

The accumulated benefits of agricultural research include steady and quite substantial gains in productivity, efficiency, food quality, environmental protection, and land use. A recent 20-year retrospective of research investment, the results of which correspond with similar out-of-province studies, has shown the return per dollar invested in this research in Ontario to be nearly 40 to 1. This recovery represents an impressive return on investment, while yielding a competitive rate of interest. Much of the research that has led to this high return was of the type that produced a steady flow of new technology designed to modify and improve the food system in a step-wise manner.

UG



The services offered by custom work operators play an important role in Ontario's farming activities. For the benefit of custom operators and farmers using custom services, the Economics Branch conducts an annual, province-wide survey of over 800 operators. The branch publishes information on services provided, rates charged, and equipment and labor supplied.

Bibliography

This bibliography lists all publications which were the result of research completed during the period April 1, 1982 to March 31, 1983.

The publications report on research programs and projects approved by the Agricultural Research Institute of Ontario and funded in total or in part by the Ontario Ministry of Agriculture and Food.

J.C. Rennie
Director of Research

Contents

Agricultural Laboratory Services 19

Centralia College of Agricultural Technology 20

Economics Branch 21

Horticultural Research Institute of Ontario 22

Kemptville College of Agricultural Technology 31

New Liskeard College of Agricultural Technology 33

Ridgetown College of Agricultural Technology 34

University of Guelph 41
- Beef 41
- Dairy 41
- Swine 42
- Poultry 43
- Bees 44
- Cereals 45
- Forage 46
- Pulses and other Crops 47
- Vegetables 48
- Tree Fruits and Small Fruits 49
- Ornamentals 50
- Agricultural Residue Management 50
- Farm Buildings and Installations 51
- Crop Mechanization 51
- Weeds 51
- Insects 53
- Plant Diseases 54
- Meteorology 54
- Agriculture and Water Quality 54
- Agricultural Land Use 55
- Soil/Crop Management 55
- Food 56
- Rural Living 57
- Farm Management, Production Economics, Resource and Inputs 58
- Marketing, Trade and Agricultural Policy 58
- Biomedical Sciences 59
- Pathology 60
- Veterinary Microbiology and Immunology 61
- Clinical Studies 63
- Fish 64

Agricultural Laboratory Services

PERIODICALS

Braun, H.E. and J. Stanek. (1982) "Application of the AOAC multi-residue method to determination of synthetic pyrethroid residues in celery and animal products." *Assn. Off. Anal. Chem. J.* 65: 685-89.

Braun, H.E., G.M. Ritcey, B.D. Ripley, F.L. McEwen and R. Frank. (1982) "Studies of the disappearance of nine pesticides on celery and lettuce grown on muck soil in Ontario, 1977-1980." *Pesticide Sci.* 13: 119-28.

Bruin, G.C.A., L.V. Edgington and B.D. Ripley. (1982) "Bioactivity of the fungicide metalaxyl in potato tubers after foliar sprays." *Can. J. Plant Pathol.* 4: 353-56.

Coote, D.R., E.M. MacDonald, W.T. Dickinson, R.C. Costry and R. Frank. (1982) "Agriculture and water quality in the Canadian Great Lakes basin: I. Representative agricultural watershed." *J. Environ. Qual.* 11: 473-81.

Frank, R. (1982) "Changing practices and changing residues in animal fats and plant oils 1890-1980." *Assn. Off. Anal. Chem. J.* 59: 589a-900a.

Frank, R. (1983) "Pesticides in the eighties." *Can. Fruitgrower.* Feb. pp. 21-23.

Frank, R. (1982) "Safeguarding the quality of food; pesticides and Ontario agriculture 1890-1980." *Highlights Agric. Res. Ont.* 5(4): 8-11.

Frank, R., G.J. Sirons, R.A. Campbell and D. Mewett. (1983) "Residues of 2,4-D, dichlorprop and picloram in wild berries from treated rights-of-way and conifer release sites in Ontario, 1979-1981." *Can. J. Plant Sci.* 195-209.

Frank, R., H.E. Braun, G. Ritcey, F.L. McEwen and G.J. Sirons. (1982) "Pesticide residues in onions and carrots grown on organic soils, Ontario, 1975 to 1980." *J. Econ. Entomol.* 75: 560-65.

Frank, R., H.E. Braun, M.V.H. Holdrinet, G.J. Sirons and B.D. Ripley. (1982) "Agriculture and water quality in the Canadian Great Lakes basin: V. pesticide use in 11 agricultural watersheds and presence in stream water, 1975-1977." *J. Environ. Qual.* 11: 497-505.

Frank, R., K.I. Stonefield, P. Suda and J.W. Potter. (1982) "Impact of nickel contamination on the production of vegetables on an organic soil, Ontario, Canada, 1980-1981." *Total Environ.* 26: 41-65.

French, B.J., B.D. Ripley and L.V. Edgington. (1982) "The occurrence of dimethylamine in malt." *Master Brewers Assn. Amer.* 19: 53-56.

Gaskin, D.E., R. Frank and M. Holdrinet (1983) "Polychlorinated biphenyls in harbor porpoises *Phocoena phocoena* (L) from the Bay of Fundy, Canada and adjacent waters, with some information on chlordane and hexachlorobenzene levels." *Arch. Environ. Contam. Toxicol.* 12: 211-19.

Ormrod, S.W. and R. Frank. (1983) "Pesticide safety." *Agrologist.* 12(1): 9-10.

Ripley, B.D., B.J. French and L.V. Edgington. (1982) "Gas chromatographic determination of primary and secondary amines as pentafluorobenzamide derivatives." *Assn. Off. Analyt. Chem. J.* 65: 1066-72.

Ritcey, G., F.L. McEwen, R. Frank and B.D. Ripley. (1982) "Minor crops, fungicide residues." *Pesticide Res. Rpt. 1982.* Exp. Comm. on Pesticide Use in Agric. p. 349.

Ritcey, G., F.L. McEwen, R. Frank and B.D. Ripley. (1982) "Residues in parsnips." *Pesticide Res. Rpt. 1982.* Exp. Comm. on Pesticide Use in Agric. p. 351.

Ritcey, G., F.L. McEwen, R. Frank and H.E. Braun. (1982) "Captan residues in strawberry fruit and leaves." *Pesticide Res. Rpt. 1982.* Exp. Comm. on Pesticide Use in Agric. p. 356.

Ritcey, G., F.L. McEwen, R. Frank and H.E. Braun. (1982) "Insecticide residues in potatoes." *Pesticide Res. Rpt. 1982.* Exp. Comm. on Pesticide Use in Agric. p. 353.

Ritcey, G., F.L. McEwen, R. Frank and H.E. Braun. (1982) "Pesticide residues in onions as a result of foliar treatments." *Pesticide Res. Rpt. 1982.* Exp. Comm. on Pesticide Use in Agric. p. 350.

Ritcey, G., F.L. McEwen, R. Frank and H.E. Braun. (1982) "Residue in carrots." *Pesticide Res. Rpt. 1982.* Exp. Comm. on Pesticide Use in Agric. p. 340.

Ritcey, G., F.L. McEwen, R. Frank, H.E. Braun and B.D. Ripley. (1982) "Insecticide residues in strawberries." *Pesticide Res. Rpt. 1982.* Exp. Comm. on Pesticide Use in Agric. p. 355.

Ritcey, G., F.L. McEwen, R. McGraw, R. Frank and H.E. Braun. (1982) "Captan residues in tomatoes." *Pesticide Res. Rpt. 1982.* Exp. Comm. on Pesticide Use in Agric. p. 357.

Ritcey, G., F.L. McEwen, R. McGraw, R. Frank and H.E. Braun. (1982) "Insecticide residues in green peppers and tomatoes". *Pesticide Res. Rpt. 1982.* Exp. Comm. on Pesticide Use in Agric. p. 352.

Ritcey, G., F.L. McEwen, R. McGraw, R. Frank and H.E. Braun. (1982) "Pesticide residues in green bush beans." *Pesticide Res. Rpt. 1982.* Exp. Comm. on Pesticide Use in Agric. p. 339.

Ritcey, G., F.L. McEwen, R. McGraw, R. Frank and H.E. Braun. (1982) "White beans and soybeans, insecticide residues." *Pesticide Res. Rpt. 1982.* Exp. Comm. on Pesticide Use in Agric. p. 338.

PROCEEDINGS

Frank, R. (1982) "The role of the Canadian Assn. of Pesticide Control Officials (CAPCO) in provincial regulatory use." *Pesticide Workshop Proc., Can. Council Resource and Environ. Ministers.* Toronto, Mar. pp. 108-09.

BOOKS, THESES, REPORTS

Cooper, G.S., F.L. McEwen, R. Cameron, J.R. Carrow, C.D. Fowle, R. Frank, A.H. Gartner, D.H. Harding, C.R. Harris, J.C. Ingratta, E.F. Muir, L.F. Smith, G.R. Stephenson, F.C. Taylor. (1983) *Paraquat, an overview.* OPAC, OME. Jan.

Cooper, G.S., F.L. McEwen, R. Cameron, J.R. Carrow, C.D. Fowle, R. Frank, A.H. Gartner, D.H. Harding, C.R. Harris, J.C. Ingratta, E.F. Muir, L.F. Smith, G.R. Stephenson, F.C. Taylor. (1983) *Report on acephate and methamidophos.* OPAC, OME. Jan.

Charles, M.E., R. Frank, D.C.F. Muir. (1983) *Rpt. to Ont. Waste Management Corp.* Task Force on Waste Quantities Study, Feb.

Chau, A.S.Y., B.D. Ripley and F. Kawahara. (1981) "Organophosphorus pesticides". *Chlorine and Phosphorus Containing Pesticides.* Ed. A.S.Y. Chau and B.K. Afghan. Boca Raton, Florida: CRC Press Inc. pp. 61-154.

Frank, R., M.J. Boddington, J.R. Roberts, W.B. Crummett, V. Douglas, D.L. Grant, P.A. Jones, I.W. Karasek, H.A. McLeod, S.H. Safe, J. Singh, H. Tosine, R. Willes. (1982) *Chlorinated phenols: criteria for environmental quality.* NRCC 18578 (ISSN 0316-0114).

Frank, R., R. Shaw, K. Hikichi, C. Hunter and I. Northover. (1983) *A position and strategy for the use of captan in fruit production in Ontario.* OMAF. Jan.

Harris, C.R., G.S. Cooper, F.L. McEwen, R. Cameron, J.R. Carrow, C.D. Fowle, R. Frank, A.H. Gartner, D.H. Harding, J.C. Ingratta, E.F. Muir, L.F. Smith, G.R. Stephenson, F.C. Taylor. (1982) *An assessment of pesticide research projects funded by the Ministry of the Environment through OPAC 1981-82.* (ISSN 0710-7897).

Klauck, C., C. Palgity and R. Frank. (1982) "Metal transfer in a pilot project vermicomposting process". *Development of Vermicomposting Operation as a Prototype Plant.* Ed. Bird and Hale Ltd., Environ. Can. File 80-141a, Oct. pp. 137-43.

Ripley, B.D. and A.S.Y. Chau. (1981) "Carbamate Pesticides". *Analysis of Pesticides in Water: Volume III, Nitrogen Containing Pesticides.* Ed. A.S.Y. Chau and B.K. Afghan. Boca Raton, Florida: CRC Press Inc. pp. 1-182.

Sirons, G.J., A.S.Y. Chau and A.E. Smith. (1981) "The phenoxyalkyl acid herbicides (CPHs)". *Analysis of Pesticides in Water: Volume II, Chlorine and Phosphorus Containing Pesticides.* Ed. A.S.Y. Chau and B.K. Afghan. Boca Raton, Florida: CRC Press Inc. pp. 155-227.

Thomas, R.L. and R. Frank. (1983) "PCB in sediment and fluvial suspended solids of the Great Lakes". *Physical Behaviour of PCB in the Great Lakes.* Ed. Mackay, Paterson, Eisenreich and Simmons. Ann Arbor Sci. pp. 245-67.

PRESENTATIONS

Braun, H.E. (1983) The role of the OMAF Provincial Pesticide Residue Testing Laboratory in the surveillance of Ontario's food and environment. Erindale Campus, Univ. of Toronto, Mar.

Frank, R. (1983) Accumulation of copper in soils. Seminar on copper in agriculture. Univ. of Guelph, Mar.

Frank, R. (1983) Agricultural Laboratory Services. Div. Conf. Toronto, Feb.

Frank, R. (1982) Captan in fruit and research findings. Crop Protection Comm. Ann. Seminar. Guelph, Nov.

Frank, R. (1983) Managing persistent herbicides in soil. Ont. Hort. Crops Conf. Toronto, Feb.

Frank, R. (1982) Pesticide handling and safety. Elevator Course. RCAT, Dec.

Frank, R. (1983) Pesticides in the eighties. 124th Ann. Conf. of Ont. Fruit & Veg. Growers' Assn. Toronto, Jan.

Frank, R. (1982) Safeguarding the quality of food. Home Econ. Conf. Toronto, Nov.

Frank, R. (1982) Safehandling of pesticides. 31st Ann. Conf. of Muck Veg. Growers. Bradford, Apr.

Frank, R. (1983) Update on Captan. Ont. Hort. Crops Conf. Toronto, Feb.

Ripley, B.D. (1983) Applying results from residue lab analyses. Cont. Educ. Sci. of Weed Control Cause. Univ. of Guelph, Mar.

Ripley, B.D. (1982) Grey mold (Botrytis) control on strawberries. Ann. Seminar, Ont. Crop Protection Comm. Univ. of Guelph, Nov.

Ripley, B.D. (1983) Interpretation of pesticide residues. Environ. Biol. Seminar Series on Systemic Fungicides. Univ. of Guelph, Mar.

Centralia College of Agricultural Technology

PERIODICALS

Forrest, R.E. (1982) "Agronomy research aimed at reducing farmers' costs." *The Connection.* CCAT. 6(1): 3.

Forrest, R.E. (1982) "Crop research at CCAT." *Voice of the Huron Farmer.* Aug.

Forrest, R.E. (1982) "Crops update." *Voice of the Huron Farmer.* Aug.

Forrest, R.E. (1982) "Field bean research at CCAT." *Cash Crop Farming.* May.

Forrest, R.E. (1982) "One-step bean harvest needs better varieties." *Cash Crop Farming.* June.

Forrest, R.E. (1982) "Planting white beans." *Exeter Times Advocate.* May.

Forrest, R.E. (1982) "Working to keep farming profitable." *Farm Update.* Apr.

O'Toole, J.J. (1982) "Dicamba for annual weed control with wick and roller applicators." (Abstr.) *Exp. Comm. on Weeds Res. Rpt.: East Sect.* p. 516.

O'Toole, J.J. (1982) "Hedge nettle control in corn." (Abstr.) *Exp. Comm. on Weeds Res. Rpt.: East Sect.* p. 553.

O'Toole, J.J. (1982) "Proso millet control in white beans." (Abstr.) *Exp. Comm. on Weeds Res. Rpt.: East Sect.* p. 553.

O'Toole, J.J. (1982) "Quackgrass control in white and kidney beans." (Abstr.) *Exp. Comm. on Weeds Res. Rpt.: East Sect.* p. 474.

O'Toole, J.J. (1982) "Roller and wick applicators for milkweed control in white beans." (Abstr.) *Exp. Comm. on Weeds Res. Rpt.: East Sect.* p. 515.

O'Toole, J.J. (1982) "Weed control in field beans." *Beans in Canada.* 9(30): 24.

O'Toole, J.J. (1982) "Weed control in red clover seeded down." (Abstr.) *Exp. Comm. on Weeds Res. Rpt.: East Sect.* p. 56.

O'Toole, J.J. (1982) "Weed control in rutabagas." (Abstr.) *Exp. Comm. on Weeds Res. Rpt.: East Sect.* p. 260.

O'Toole, J.J. (1982) "Weed control in white and kidney beans - ppi." (Abstr.) *Exp. Comm. on Weeds Res. Rpt.: East Sect.* p. 243.

O'Toole, J.J. (1982) "Weed control in white and kidney beans ppi and pre." (Abstr.) *Exp. Comm. on Weeds Res. Rpt.: East Sect.* p. 244.

O'Toole, J.J. (1982) "Weed control in white and kidney beans, pre and post." (Abstr.) *Exp. Comm. on Weeds Res. Rpt.: East Sect.* p. 245.

O'Toole, J.J. (1982) "Weed control with PP021 on white and kidney beans." (Abstr.) *Exp. Comm. on Weeds Res. Rpt.: East Sect.* p. 246.

BOOKS, THESES, REPORTS

O'Toole, J.J. and R.E. Forrest. (1983) *Agronomy Research 1982 Report.* CCAT. Jan.

PRESENTATIONS

Forrest, R.E. (1982) Forage legumes as green manures - influences on companion crop and subsequent corn crop. Northreys King Sem. CCAT, Apr.

Forrest, R.E. (1983) Growing soybeans for the first time. Huron SCIA Mtg. Brussels, Mar.

Forrest, R.E. (1982) Plowdown forage research at CCAT. Red Clover Symp. Univ. of Guelph, Dec.

Forrest, R.E. (1982) Plowdown forages. Crops Update. CCAT, Aug.

Forrest, R.E. (1982) Plowdown forages and soybean varieties. W.G. Thompson Seed Dealers Mtg. CCAT, Sept.

Forrest, R.E. (1982) Plowdown research at CCAT. Inwood Co-Op Mtg. Inwood, Mar.

Forrest, R.E. (1982) Pulse and oilseed crops variety review. Huron SCIA Ann. Mtg. Brussels, Nov.

Forrest, R.E. (1983) Soybean research at CCAT. OSGMB Directors Mtg. London, Feb.

Forrest, R.E. (1982) Stress and the white bean plant. Dupont Dealers Mtg. Hensall, July.

Forrest, R.E. (1982) White bean research at CCAT. OBPMB Quality Sem. CCAT, Sept.

O'Toole, J.J. (1982) Changes in weed control recommendations for 1982. Huron SCIA Ann. Mtg. Brussels, Nov.

O'Toole, J.J. (1983) Effect of weed control on white bean quality. Ont. Bean Producers Mktg. Bd. Growers Mtgs. Delaware, Exeter, Mitchell, Mar.

O'Toole, J.J. (1983) Growing soybeans for the first time. UCO Mtg. Exeter, Mar.

O'Toole, J.J. (1983) Production practices for soybeans. UCO Mtg. Stratford, Mar.

O'Toole, J.J. (1982) Promising herbicides for weed control in white and kidney beans. Crops Update. CCAT, Aug.

O'Toole, J.J. (1982) Research update on rutabagas. Ann. Mtg. Ont. Rutabaga Producers Mktg. Bd. CCAT, Apr.

O'Toole, J.J. (1982) Rope wick herbicide applicators. Ann. Conf. Muck Veg. Growers. Bradford, Apr.

O'Toole, J.J. (1982) Seed bank studies of proso millet in three crops. London, July.

O'Toole, J.J. (1982) The results of narrow row white bean research at CCAT. Huron Co. OSCIA Ann. Mtg. Brussels, Nov.

AUDIO VISUAL

Forrest, R.E. (1982) Crops update at CCAT. CKNX Radio and TV. Wingham, Aug.

O'Toole, J.J. (1983) Effects of temperature and soil moisture on survival of perennial corps. CKNX Radio and TV. Wingham, Jan.

O'Toole, J.J. (1983) The effect of mild temperatures on winter wheat and fruit trees. CFPL Radio and TV. London, Feb.

Stephen, J.R. (1983) An assessment of forming skills acquired by farm youths. OMAF radio tape. May.

Stephens, J.R. (1982) Factors affecting the establishment and success of young farmers. CFPL TV. London.

Stephens, J.R. (1982) Factors affecting the establishment and success of young farmers. OMAF radio tape. May.

Economics Branch

PERIODICALS

Abraham, F.R., W.A. Gardhouse, H.J. Stanley and D.J. Rose. (1982) "Economics of sheep production." *OMAF Factsheet*. May.

Blum, H. (1982) "Economics of production and marketing." *Handbook of Fish Culture*. Commercial Agric. Liaison Committee.

Blum, H. (1982) "Fish farming in Ontario." *OMAF Factsheet*. Sept.

Dolson, S., A. Jory and B. McCorquodale. (1982) "Economics of the dairy cow enterprise." *OMAF Factsheet*. Sept.

Fisher, G.A. (19882) "Agricultural statistics in Ontario — 100th anniversary." *Cash Crop Farming*. 43(5): 12.

Fisher, G.A. (1982) "Calculating the costs of owning and operating farm tractors." *Cash Crop Farming*. 43(8): 17.

Fisher, G.A. (1983) "Considering the crop options available in 1983." *Cash Crop Farming*. 44(1): 14-15.

Fisher, G.A. (1983) "Corn economics for 1983." *Cash Crop Farming*. 44(2): 47.

Fisher, G.A. (1982) "Custom harvesting rates for Ontario." *Cash Crop Farming*. 43(6): 17.

Fisher, G.A. (1982) "Interest cost considerations in storing corn and soybeans." *Hog Market Place Qtly*. Fall.

Fisher, G.A. (1982) "Marketing options for Ontario soybean growers." *Cash Crop Farming*. 43(11): 19.

Fisher, G.A. (1982) "Processing tomato industry in Essex County." *County Grower*. May.

Fisher, G.A. (1982) "Ten years of corn production in Ontario." *Cash Crop Farming*. 43(9): 16.

Fisher, G.A. (1982) "The cropping dilemma." *Cash Crop Farming*. 43(4): 11-12.

Fisher, G.A. (1983) "Using custom farmwork services on your farm." *Cash Crop Farming*. 44(3): 27-28.

Fisher, G.A. (1982) "What does the census say?" *Cash Crop Farming*. 43(10): 15.

van Vuuren, W. and G. Lentz. (1982) "Farm property assessment and taxation in Ontario." *Assessors Rev*. Fall: 11-13.

BOOKS, THESES, REPORTS

Abraham, F.R. (1982) *Beef feedlot cost study, Southern and Western Ontario, 1981*. Ec. Br., OMAF. June.

Campbell, B. (1982) *Estimated costs of growing potatoes, 1981*. Ec. Br., OMAF. Mar.

Campbell, B. (1983) *Estimated costs of growing potatoes, 1982 and projections for 1983.* Ec. Br., OMAF. Jan.

Fisher, G.A. (1983) *A survey of custom farmwork rates charged in Ontario, 1982.* Ec. Br., OMAF. Jan.

Fisher, G.A. (1983) *Custom farmwork rates charged in Ontario, 1982 (summary).* Ec. Br., OMAF. Jan.

Fisher, G.A. (1982) *Greenhouse vegetable statistics, production areas, yields and returns for Ontario.* Ec. Br., OMAF. May.

Fisher, G.A. (1982) *Processing tomato statistics production areas, yields, and returns for Ontario and United States.* Ec. Br., OMAF. May.

Fisher, G.A. (1983) *The economics of producting flue-cured tobacco in Ontario.* Ec. Br., OMAF. Jan.

Lentz, Gary (1983) *Grain and dairy policies in the United States.* Ec. Br., OMAF. Feb.

McKibbon, E.D. (1982) *The economics of concord and deChaunac grape production in Ontario, 1980.* Ec. Br., OMAF. Aug.

PRESENTATIONS

Fisher, G.A. (1983) Budgets for machine and hand harvest tomatoes. Processing Tomato and Equipment Day. RCAT, Mar.

Fisher, G.A. (1982) Crop budgeting aids for alfalfa and corn. OAC Banker's School. Guelph, June.

Fisher, G.A. (1983) Knowing your cost of production. Farmers Wk. RCAT, Jan.

Fisher, G.A. (1983) Managing crops to make money. Carleton Place and Stittsville, Mar.

Jaeger, Martin. (1983) Crow's Nest Pass rates. West. Br., OIA. Jan.

McKibbon, E.D. (1983) Apple production costs, 1982. Hort. Crops Conf. Toronto, Feb.

McKibbon, E.D. (1983) Cost of production of Ontario's fruit crops. Fin. Mgmt. for Fruit Growers Course, OMAF. Jan.

McKibbon, E.D. (1982) Inflation and the economics of fruit production in Ontario. Ann. Conv., Niag. Pen. Fruit and Veg. Growers Assn. Dec.

McKibbon, E.D. (1982) The economics of fruit production. Hort. Majors. Univ. of Guelph. Nov.

Roller, N. (1982) Agricultural data needs in Ontario. Ann. Mtg., Agric. Working Group of Can. Advisory Comm. on Remote Sensing. Nov.

Roller, N. (1982) "Provincial report on remote sensing activities in Ontario." Ann. Mtg., Agric. Working Group of Can. Advisory Comm. on Remote Sensing. Nov.

Wind, F. (1983) Agricultural outlook, 1983-84. Christian Farmers' Fed. Orangeville. Mar.

Horticultural Research Institute of Ontario

PERIODICALS

Abdalla, O.A., H. Khatamian and N.W. Miles. (1982) "Effects of rootstock and interstems on composition of 'Delicious' apple leaves." *J. Amer. Soc. Hort. Sci.* 107: 730-33.

Annette, G.W., F.L. McEwen and A. Loughton. (1982) "Biology and control of thrips on cabbage." *Ont. Crucifer Crops Res. Comm. Ann. Rpt.* p. 17.

Blom, T.J. (1982) "Relative humidity." *Grower Notes.* 242: 2.

Blom, T.J. and B.D. Piott. (1982) "Comparison between three different growth regulators and their time of application on the development of poinsettias." *Can. Florist.* 77(8): 8-9.

Blom, T.J. and B.D Piott. (1982) "Comparison of three growth regulators and their timing on the development of poinsettias." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 81.

Blom, T.J. and B.D. Piott. (1982) "The effect of infrared heating on the growth of Easter lilies in a free standing greenhouse." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council pp. 81-82.

Blom, J.J. and B.D. Piott. (1982) "The effects of substrates on the growth of poinsettias." *Flowers Can. News.* Aug. pp. 12-13.

Blom, T.J. and M.J. Tsujita. (1982) "Impressions from British Columbia." *Can. Florist.* 77(10): 52,54.

Bodnar, J.M., J.T.A. Proctor and R.A. Cline. (1982) "Nutrient changes in apple leaves due to spotted tentiform leafminer." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 131.

Chu, C.L. (1982) "Unlocking secrets of apple maturity." *Can Fruitgrower.* June. pp. 18-20.

Chu, C.L., E.C. Lougheed and P.D. Lister. (1982) "Maturity studies of 'McIntosh' apples for ultra low-oxygen storage." (Abstr.) *Hort. Sci.* 17(3): 62.

Chu, G.L. (1983) "New developments prolong apple storage." *The Grower.* 33(2): 12, 19.

Chudyk, R.V. (1982) "Chairman's 1982 report to the Ontario Horticultural Research Committee." *Rpt. of Grape & Wine Res. Comm.* pp. G1-G9.

Chudyk, R.V. (1982) "Computer evaluation of De Chaunac grape quality in Ontario." *Wines and Vines.* 63(2): 64.

Chudyk, R.V. (1982) "Stomacher preparation of grapes for chemical analysis." *East. Grape Grower and Winery News.* 8(4): 32.

Chudyk, R.V., A. Seaman and M. Woodbine. (1982) "Low temperature effects on yeast spores." *J. Appl. Bacteriol.* 53:XIX.

Chudyk, R.V. and J.T. Challen. (1982) "Wine evaluation of new cultivars." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. pp. 91-92.

Chudyk, R.V. and M.L. Simpson. (1982) "Use of the stomacher for grape quality analysis." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 92.

Chudyk, R.V. and P.M. Gadd. (1982) "Effect of fungicides on industrial microorganisms." *Rpt. of Comm. on Hort. Res.* Can. Hort. Codncil. p. 91.

Chudyk, R.V. and P.M. Gadd. (1982) "Microbiological stability of wines." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 91.

Cline, R.A. (1983) "Bitterpit control in apples." *OMAF Factsheet.* Feb.

Cline, R.A. (1982) "Effect of subsoiling on growth, yield and petiole composition of grapes grown on clay loam soils." *Rpt. of Grape & Wine Res. Comm.* p. G.22.

Cline, R.A. (1982) "Leaf analysis for fruit crops." *OMAF Factsheet.* Jan.

Cline, R.A. (1982) "Leaf analysis service for stone fruits." *Stone Fruit Comm. Ann. Rpt.* p. 91.

Cline, R.A. (1982) "Magnesium studies with apple." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 82.

Cline, R.A. (1982) "Magnesium studies with grapes." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 82.

Cline, R.A. (1982) "Nutritional factors and necrosis of bunch stems of grapes." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 82.

Cline, R.A. (1982) "Petiole analyses for grapes." *Rpt. of Grape & Wine Res. Comm.* p. G-19.

Cline, R.A. (1982) "Potassium nutritional studies." *Rpt. of Grape & Wine Res. Comm.* p. G-20.

Cline, R.A. (1982) "Soil management studies with peaches." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 83.

Cline, R.A. (1982) "Soil preparation before planting." *Rpt. of Grape & Wine Res. Comm.* p. G-21.

Cline, R.A. (1982) "Sources and times of application of nitrogen for grapes." *Rpt. of Grape & Wine Res. Comm.* p. G-19.

Cline, R.A. (1982) "Trickle irrigation studies with grapes." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 82.

Cline, R.A. and S.J. Leuty (1982) "Fertilizer and irrigation experiment." *Stone Fruit Comm. Ann. Rpt.* p. 8.

Cline, R.A. and S.J. Leuty. (1982) "Irrigation and soil management experiment HRIO." *Stone Fruit Comm. Ann. Rpt.* p. 9.

Cline, R.A. and S.J. Leuty. (1982) "Irrigation, soil management experiment Niagara township." *Stone Fruit Comm. Ann. Rpt.* p. 9.

Cline, R.A. and S.J. Leuty (1982) "Soil management and fertilizer studies with peach." *Stone Fruit Comm. Ann. Rpt.* p. 8.

Cline, R.A. and S.J. Leuty. (1982) "Trickle irrigation studies with peach." *Stone Fruit Comm. Ann. Rpt.* p. 8.

Cook, F.I. and V.P. Gray. (1982) "Freezing trials of strawberries - 1981 crops." *Rpt. of Ont. Small Fruit Crops Sub-Committee.* Vineland Stn. p. 9.

Courtney, W.H. (1982) "Planning a balanced vegetable garden." *Simcoe Reformer.* Feb. 25. p. A-6.

Courtney, W.H., E.A. Kerr, and B.H. MacNeill. (1982) "Breeding for resistance to bacterial canker in tomato." *Rpt. of Comm. on Hort.* Can. Hort. Council. p. 107.

Courtney, W.H., E.A. Kerr, and R.E. Pitblado. (1982) "Breeding for resistance to bacterial speck in tomato at Simcoe." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 107.

Courtney, W.H., E.A. Kerr, and G.E. Reaume. (1982) "Breeding and cultivar trials of hand-pick tomatoes for processing, Simcoe, 1982." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 95.

Courtney, W.H., E.A. Kerr, and G.E. Reaume. (1982) "Breeding and cultivar trials of machine-harvest tomatoes at Simcoe. 1982." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 95.

Dhanvantari, B.N. and E.A. Kerr. (1982) "Screening for resistance to bacterial spot in tomato." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 106.

Elfving, D.C. (1982) "Apple canopy development with growth regulators: Evaluation of PP333." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 95.

Elfving, D.C. (1982) "Managing young apple trees on the M.26 rootstock." *The Grower.* 32(7): 12-13.

Elfving, D.C. and C.G. Forshey. (1982) "Factors affecting apple tree response to chemical branch induction." (Abstr.) *HortSci.* 17(3): 70.

Fisher, K.H. (1982) "Challenge of the changing grape industry." *The Grower.* 32(8): 9,13.

Fisher, K.H. (1982) "Gibberellic acid for increasing berry size in seedless grapes." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 83.

Fisher, K.H. (1982) "Grape breeding and cultivar testing." *Rpt. of Grape & Wine Res. Comm.* p. G-10.

Fisher, K.H. (1982) "Grape rootstock experiments." *Rpt. of Grape & Wine Res. Comm.* p. G-11.

Fisher, K.H. (1982) "Naphthalene acetic for sucker control in grapevines." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. pp. 83-84.

Fisher, K.H. (1982) "Vinifera cultivar and rootstock combination trial." *Rpt. of Grape & Wine Res. Comm.* p. G-19.

Fisher, K.H. and S.E. Stevenson. (1982) "Grapevine population studies in relation to yield and quality." *Rpt. of Grape & Wine Res. Comm.* pp. G-16-17.

Fisher, K.H. and S.E. Stevenson. (1982) "Low temperature and hardiness studies with grapevines." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 84.

Fisher, K.H. and S.E. Stevenson. (1982) "Training systems for vigorous grape cultivar." *Rpt. of Grape & Wine Res. Comm.* p. G-12.

Fisher, K.H. and S.E. Stevenson. (1982) "Use of growth regulators in vineyard management." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 83.

Fleming, R.A. (1982) "Container plant production." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 84.

Fleming, R.A. (1982) "Edible nut production." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. pp. 84-85.

Fleming, R.A. (1982) "Environmental adaptation of ornamental plants." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 85.

Fleming, R.A. (1982) "Garden diary." (52 weekly articles) *Grimsby Independent* and *St. Catharines Standard.* Jan.-Dec.

Fleming, R.A. (1982) "Holly breeding." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 85.

Fleming, R.A. (1982) "Propagation of ornamental plants." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 86.

Fuleki, T. (1982) "Chemistry in aid of grape breeding: The Vineland Grape Flavour Index." *Highlights Agric. Res. Ont.* 5(3):4-6.

Fuleki, T. (1982) "De Chaunac grapes: How to deal with the surplus." *The Grower.* 33(1):12.

Fuleki, T. (1982) "Effects of a commercial anthocyanase enzyme preparation on grape juice and wine." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 92.

Fuleki, T. (1982) "Factors influencing the anthocyanin content of grapes." *East. Grape Grower and Winery News.* 8(4): 32-32.

Fuleki, T. (1982) "The Vineland Grape Flavor Index - a new objective method for the accelerated screening of grape seedlings on the basis of flavor character." *Vitis.*21:111-20.

Fuleki, T. and R.B. Palabay. (1982) "Composition of De Chaunac grape pomace." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 93.

Fuleki, T. and R.B. Palabay. (1982) "Juice potential of commercial grape cultivars." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 92.

Fuleki, T. and R.B. Palabay. (1982) "Utilization of Concord, De Chaunac, Foch and Niagara concentrates for jelly." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. pp. 92-93.

Fuleki, T. and R.B. Palabay. (11982) "Utilization of De Chaunac and Foch concentrates for wine making." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 92.

Gray, V.P. (1982) "Assessing the performance of individual tasters on sensory evaluation tasks." *East. Grape Grower and Winery News.* 8(3): 34.

Gray, V.P. (1982) "Evaluation of commercial wines by the Ontario Wine Standards Tasting Panel." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 93.

Gray, V.P. and F.I. Cook. (1982) "Handling machine harvested fruit in water." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 93.

Gray, V.P. and J. Brown. (1982) "Effect of freezing method and sugar addition on the quality of frozen strawberries." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 93.

Gray, V.P. and P.K. Deitch. (1982) "Evaluation of tomatoes as whole pack - 1982 crop." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 93.

Gray, V.P., P.K. Deitch, M. Courtney, E.A. Kerr and G. Reaume. (1982) "Evaluation of tomato breeding lines for use as canned whole pack - 1982 crop." *Rpt. of Ont. Tomato Comm.* unpaginated.

Gray, V.P., P.K. Deitch, M. Courtney, E.A. Kerr and G. Reaume. (1982) "Evaluation of tomato varieties for use as strained product - 1982 crop." *Rpt. of the Ont. Tomato Comm.* unpaginated.

Gutenmann, W.H., C.A. Bache, D.J. Lisk, D. Hoffmann, J.D. Adams and D.C. Elfving. (1982) "Cadmium and nickel in smoke of cigarettes prepared from tobacco cultured on municipal sludgeamended soil." *J. of Toxicol. and Environ. Health.* 10: pp. 423-31.

Ingratta, F.S. and W.A. Straver. (1982) "Cole crop cultivar trials." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 86.

Ingratta, F.S. and W.A. Straver. (1982) "Greenhouse seedless cucumber management." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 87.

Ingratta, F.S. and W.A. Straver. (1982) "Greenhouse tomato management." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 86.

Ingratta, F.S. and W.A. Straver. (1982) "Supplementary lighting of greenhouse tomatoes and cucumbers." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 87.

Johnston, G.R., E.N. Knibbe and M. Valk. (1982) "Potato cultivar trial on organic soil, 1981." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 102.

Kerr, E.A. (1982) "Aerial roots." *Tomato Genetics Coop. Rpt.* 32:29.

Kerr, E.A. (1983) "Breeding for stable resistance to diseases." *HortSci.* 18: 27-30.

Kerr, E.A. (1982) "Further data on tiny - ti." *Tomato Genetics Coop. Rpt.* 32: 27-28.

Kerr, E.A. (1982) "Further studies of genes for resistance to Cladosporium fulvum." *Tomato Genetics Coop. Rpt.* 32: 19.

Kerr, E.A. (1982) "Hunt continues for the home of virescent orange (vo)." *Tomato Genetics Coop. Rpt.* 32: 29-31.

Kerr, E.A. (1982) "Linkage studies with Green ripe-Gr." *Tomato Genetics Coop. Rpt.* 32: 18-19.

Kerr, E.A. (1982) "Linkage tests with finely netted - fn are mostly negative." *Tomato Genetics Coop. Rpt.* 32: 21-22.

Kerr, E.A. (1982) "Linkage tests with slender stem - sr." *Tomato Genetics Coop. Rpt.* 32: 27.

Kerr, E.A. (1982) "Location of incurva inc still questionable." *Tomato Genetics Coop. Rpt.* 32: 25-26.

Kerr, E.A. (1982) "Never ripe-2 (Nr-2) a slow ripening mutant resembling Nr and Gr." *Tomato Genetics Coop. Rpt.* 32: 33.

Kerr, E.A. (1982) "New residents on chromosome 1: rvt, vi, lg, pe, dp, Nr-2, tmf, cjf." *Tomato Genetics Coop. Rpt.* 32: 16-17.

Kerr, E.A. (1982) "Pale dwarf (pdw) a new mutation on Chromosome 7." *Tomato Genetics Coop. Rpt.* 32: 31.

Kerr, E.A. (1982) "Reduced, rd, a mutant with small size." *Tomato Genetics Coop. Rpt.* 32: 32.

Kerr, E.A. (1982) "Search continues for the home of gracilis - gra." *Tomato Genetics Coop. Rpt.* 32: 24-25.

Kerr, E.A. (1982) "Search for linkage with grotesque - gq." *Tomato Genetics Coop. Rpt.* 32: 23-24.

Kerr, E.A. (1982) "Single flower truss - sft appears to be on Chromosome 3." *Tomato Genetics Coop. Rpt.* 32: 31.

Kerr, E.A. (1982) "Stunted - stu: another small plant mutant possibly on Chromosome 5." *Tomato Genetics Coop. Rpt.* 32: 33.

Kerr, E.A. (1982) "Suggestions of linkage with fusiformis - fu." *Tomato Genetics Coop. Rpt.* 32: 22-23.

Kerr, E.A. (1982) "Three-point test for some of the genes newly assigned to chromosome 1." *Tomato Genetics Coop. Rpt.* 32: 18.

Kerr, E.A. (1982) "Three-point tests of sherry - sh on Chromosome 10." *Tomato Genetics Coop. Rpt.* 32: 21.

Kerr, E.A. (1982) "Two- and three-point tests with auv on Chromosome 10." *Tomato Genetics Coop. Rpt.* 32: 20.

Kerr, E.A. (1982) "Two- and three-point tests with hy and nor on Chromosome 10." *Tomato Genetics Coop. Rpt.* 32: 19.

Kerr, E.A. (1982) "Uniform green - ug is still without a home." *Tomato Genetics Coop. Rpt.* 32: 28-29.

Kerr, E.A. (1982) "Upright growth (upg) and aerial roots-2 (aer-2)-two new genes from White Beauty." *Tomato Genetics Coop. Rpt.* 32: 34.

Kerr, E.A. and L.G. vandenBerkmortel. (1982) "Upright leaf - ul." *Tomato Genetics Coop. Rpt.* 32: 34.

Knibbe, E.N. and M. Valk. (1982) "Barley windbreak central in onions." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 104.

Knibbe, E.N. and M. Valk. (1982) "Brussels sprouts cultivar trial, 1982." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 105.

Knibbe, E.N. and M. Valk. (1982) "Brussels sprouts cultivar trial on mineral soil, 1981." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. pp. 101-102.

Knibbe, E.N. and M. Valk. (1982) "Carrot cultivars storage trial, 1981-1982." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. pp. 104-105.

Knibbe, E.N. and M. Valk. (1982) "Celery cultivar storage trial, 1981." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 101.

Knibbe, E.N. and M. Valk. (1982) "Celery planting systems trial, 1982." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 104.

Knibbe, E.N. and M. Valk. (1982) "Celery treatment storage trial, 1981." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 101.

Knibbe, E.N. and M. Valk. (1982) "Early maturity of fresh market carrot cultivars in organic soil, 1982." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 102.

Knibbe, E.N. and M. Valk. (1982) "Effect of Embark 1.5-S on sprouting of onions in storage, 1979/80." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 101.

Knibbe, E.N. and M. Valk. (1982) "Effect of fertilizer placement on horizontal lesions in carrots, 1979 to 1981." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 100.

Knibbe, E.N. and M. Valk. (1982) "Effect of reduced fertilizer rates on horizontal lesions in carrots, 1978 to 1981." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 100.

Knibbe, E.N. and M. Valk. (1982) "Fresh market carrot cultivar trial on mineral soil, 1981." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 99.

Knibbe, E.N. and M. Valk. (1982) "Fresh market carrot cultivar trial on mineral soil, 1982." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 102.

Knibbe, E.N. and M. Valk. (1982) "Fresh market carrot cultivar trial on organic soil, 1982." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. pp. 98-99.

Knibbe, E.N. and M. Valk. (1982) "Fresh market carrot cultivar trial on organic soil, 1982." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 98.

Knibbe, E.N. and M. Valk. (1982) "Greenhouse seedless cucumber cultivar trial, spring 1981." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 102.

Knibbe, E.N. and M. Valk. (1982) "Greenhouse seedless cucumber low night temperature trial on organic soil, 1982." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 105.

Knibbe, E.N. and M. Valk. (1982) "Greenhouse seedless cucumber, low temperature trial on organic soil, spring 1981." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 102.

Knibbe, E.N. and M. Valk. (1982) "Greenhouse seedless cucumber variety trial on organic soil, spring 1982." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 105.

Knibbe, E.N. and M. Valk. (1982) "Herbicides in carrots, 1982." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 103.

Knibbe, E.N. and M. Valk. (1982) "Lettuce cultivar trials, 1981." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 99.

Knibbe, E.N. and M. Valk. (1982) "Lettuce cultivar trials, 1982." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 103.

Knibbe, E.N. and M. Valk. (1982) "Onion cultivar storage trial, 1981-1982." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 105.

Knibbe, E.N. and M. Valk. (1982) "Onion cultivar trials, 1981." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 99.

Knibbe, E.N. and M. Valk. (1982) "Processing carrot cultivar trial, 1981." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 99.

Knibbe, E.N. and M. Valk. (1982) "Processing carrot cultivar trial, 1982." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 98.

Knibbe, E.N. and M. Valk. (1982) "Seedstock development trial of celery cultivars, 1982." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 100.

Knibbe, E.N. and M. Valk. (1982) "Seedstock development trial of celery cultivars, 1982." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 103.

Knibbe, E.N. and M. Valk. (1982) "Spanish onions planting systems and tunnel study, 1982." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 104.

Knibbe, E.N. and M. Valk. (1982) "Weed control in carrots with multiple applications with reduced rates on linuron." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 103.

Lougheed, E.C., C.L. Chu and D.C. Elfving. (1982) "Low-oxygen storage of Sparten and Empire apples." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 131.

Loughton, A. (1983) "A taste of garlic for Ontario planned." *Simcoe Reformer.* Tobacco and Agric. Edit. Feb. 25. p.A-10.

Loughton, A. (1982) "Cauliflowers: A new look at an old crop." *Simcoe Reformer.* Tobacco Farm Ed. Feb.

Loughton, A. and R. Baker. (1982) "Asparagus, depth of direct seeding." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 95.

Loughton, A. and R. Baker. (1982) "Asparagus, depth of planting x row widths." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 95.

Loughton, A. and R. Baker. (1982) "Broccoli, late summer cultivar trial, 1982." *Ont. Crucifer Crops Res. Comm. Ann. Rpt.* p. 7.

Loughton, A. and R. Baker. (1982) "Brussels sprouts, cultivar trial, 1982." *Ont. Crucifer Crops Res. Comm. Ann. Rpt.* p. 8.

Loughton, A. and R. Baker. (1982) "Cabbage, late maturing cultivars, 1982." *Ont. Crucifer Crops Res. Comm. Ann. Rpt.* p. 10.

Loughton, A. and R. Baker. (1982) "Cabbage, mid-season cultivars trial, 1982." *Ont. Crucifer Crops Res. Comm. Ann. Rpt.* p. 9.

Loughton, A. and R. Baker. (1982) "Cabbage, red, mid-season cultivar trial, 1982." *Ont. Crucifer Crops Res. Comm. Ann. Rpt.* p. 9.

Loughton, A. and R. Baker. (1982) "Cauliflowers, fall maturing cultivars, 1982." *Ont. Crucifer Crops Res. Comm. Ann. Rpt.* p. 11.

Loughton, A. and R. Baker. (1982) "Red cabbage, fall maturing cultivars, 1982." *Ont. Crucifer Crops Res. Comm. Ann. Rpt.* p. 10.

Loughton, A. and R. Baker. (1982) "Spanish onion cultivar trial." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 99.

Loughton, A., R. Baker and J.W. Riekels. (1982) "Cauliflowers, black speck in curds for processing 1982." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 96.

McKeown, A.W. (1982) "Seed potato production: past and future." *The Grower.* 32(6): 18.

McKeown, A.W. and L.A. Reynolds. (1983) "Early harvest and main crop potato cultivar trials." *Ann. Progress Rpt. of the Regional Potato Trials in Ont. 1982.* Ont. Reg. Potato Comm. pp. 17-20.

McKeown, A.W. and L.A. Reynolds. (1983) "Growth of potatoes from true seed." *Ann. Progress Rpt. of the Regional Potato Trials in Ont. 1982.* Ont. Reg. Potato Comm. pp. 15-16.

McKeown, A.W. and L.A. Reynolds. (1982) "Growth of potatoes from true seed." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 96.

McKeown, A.W. and L.A. Reynolds. (1982) "Small whole potato seed production." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 96.

McKeown, A.W. and L.A. Reynolds. (1982) "Production of base potato tubers from plants produced in vitro." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 106.

McKeown, A.W. and L.A. Reynolds. (1982) "Rapid propagation of virus-indexed potato plants in vitro." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 106.

McKeown, A.W. and L.A. Reynolds. (1982) "Tomato management program." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 106.

McKeown, A.W., L.A. Reynolds and S. Squire. (1982) "Potato test tube plantlet production under semi commercial conditions." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. pp. 105-106.

Metcalf, J.G., E.A. Kerr, J.K. Muehmer, R. Garton, P. Craven, V.P. Gray and D. Jessop. (1982) "Processing tomato coordinated trials, 1982." *Rpt. of the Ont. Tomato Comm.* Unpaginated.

Miles, N.W. (1983) "Currants and gooseberries." *OMAF Factsheet.* Feb.

Miles, N.W. (1983) "Strawberry processing - cooperation is the key." *The Grower.* 33(3): 17,19.

Miles, N.W., A. Vandenberg and C. Chandler. (1982) "Processing strawberry production research program." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 87.

Miles, N.W. and A. Vandenberg. (1982) "Highbush blueberry irrigation and harvesting methods study, Vineland." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 87.

Miles, N.W. and A. Vandenberg. (1982) "Raspberry trials." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 89.

Miles, N.W. and A. Vandenberg. (1982) "Strawberry breeding." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 89.

Miles, N.W. and A. Vandenberg. (1982) "Strawberry culture in narrow rows and ridges." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. pp. 88-89.

Miles, N.W. and C. Chandler. (1982) "Blueberry soil management and cultivar trial, Simcoe." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 88.

Miles, N.W. and C. Chandler. (1982) "Highbush blueberry soil management study, Simcoe." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 88.

Miles, N.W. and E.H. Lauro. (1982) "Machine harvesting." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 88.

O'Sullivan, J. (1982) "Controlling problem weeds in vegetable crops." *The Grower.* 32(11): 6,14.

O'Sullivan, J. (1983) "New developments in weed control." *Simcoe Reformer.* Feb. 24. p. 5.

O'Sullivan, J. (1983) "Weed control most effective." *Tillsonburg News.* Mar. 4. p. 4.

O'Sullivan, J. and W.J. Bouw. (1982) "Effect of date of seeding on yield of cucumbers." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 97.

O'Sullivan, J. and W.J. Bouw. (1982) "Effects of roll size on fruit recovery in once-over machine harvested cucumbers." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 97.

O'Sullivan, J. and W.J. Bouw. (1982) "Evaluation of methods for early season production of cucumbers." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 97.

O'Sullivan, J. and W.J. Bouw. (1982) "Evaluation of methods for early season production of peppers." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 98.

O'Sullivan, J. and W.J. Bouw. (1982) "Evaluation of processing cucumber cultivars for multiple hand harvest." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. pp. 97-98.

O'Sullivan, J. and W.J. Bouw. (1982) "Evaluation of processing cucumber cultivars for once-over harvest." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 97.

O'Sullivan, J. and W.J. Bouw. (1982) "Pepper cultivar evaluation." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 98.

O'Sullivan, J. and W.J. Bouw. (1982) "Postemergence control of quackgrass." *Exp. Comm. on Weeds Res. Rpt.: East. Sect.* p. 473.

O'Sullivan, J. and W.J. Bouw. (1982) "Preemergence activity of postemergence grass herbicides." *Exp. Comm. on Weeds Res. Rpt.: East. Sect.* p. 554.

O'Sullivan, J. and W.J. Bouw. (1982) "Weed control in cucumbers I." *Exp. Comm. on Weeds Res. Rpt.: East. Sect.* p. 342.

O'Sullivan, J. and W.J. Bouw. (1982) "Weed control in cucumbers II." *Exp. Comm. on Weeds Res. Rpt.: East. Sect.* p. 343.

O'Sullivan, J. and W.J. Bouw. (1982) "Weed control in direct seeded asparagus." *Exp. Comm. on Weeds Res. Rpt.: East. Sect.* p. 357.

O'Sullivan, J. and W.J. Bouw. (1982) "Weed control in direct seeded tomato." *Exp. Comm. on Weeds Res. Rpt.: East. Sect.* p. 334.

O'Sullivan, J. and W.J. Bouw. (1982) "Weed control in established asparagus." *Exp. Comm. on Weeds Res. Rpt.: East. Sect.* p. 353.

O'Sullivan, J. and W.J. Bouw. (1982) "Weed control in newly-painted asparagus crowns." *Exp. Comm. on Weeds Res. Rpt.: East. Sect.* p. 354.

O'Sullivan, J. and W.J. Bouw. (1982) "Weed control in sweet corn I." *Exp. Comm. on Weeds Res. Rpt.: East. Sect.* p. 148.

O'Sullivan, J. and W.J. Bouw. (1982) "Weed control in sweet corn II." *Exp. Comm. on Weeds Res. Rpt.: East. Sect.* p. 149.

O'Sullivan, J. and W.J. Bouw. (1982) "Weed control in transplanted broccoli." *Exp. Comm. on Weeds Res. Rpt.: East. Sect.* p. 364.

O'Sullivan, J. and W.J. Bouw. (1982) "Weed control in transplanted peppers." *Exp. Comm. on Weeds Res. Rpt.: East. Sect.* p. 351.

O'Sullivan, J. and W.J. Bouw. (1982) "Weed control in transplanted tomato." *Exp. Comm. on Weeds Res. Rpt.: East. Sect.* p. 335.

O'Sullivan, J.,W.S. Reid, B. Crompton and W.J. Bouw. (1982) "Effect of date of seeding on yield of cucumbers." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 97.

Ritcey, G., F.L. McEwen, L.V. Edgington, M. Valk and E. Knibbe. (1982) "Pesticides for onion maggot and smut control - precision seeding." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 122.

Smith, R.B. (1982) "Cranberry cultivar trials." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 94.

Smith, R.B. (1982) "Evaluation of various types of oils for use as antidesiccants on peaches." *Rpt. of the Comm. on Hort. Res.* Can. Hort. Council. p. 94.

Smith, R.B. (1982) "From tree to table: quality in Ontario peaches." *Highlights. Agric. Res. Ont.* 5(2): 11-14.

Smith, R.B. and E.N. Knibbe. (1982) "Celery storage trials." *Rpt. of the Comm. on Hort. Res.* Can. Hort. Council. p. 94.

Smith, R.B. and N.W. Miles. (1982) "Strawberry cultivar storage trials." *Rpt. of the Comm. on Hort. Res.* Can. Hort. Council. p. 94.

Smith, R.B., D. Enstone and S. Qually. (1982) "Effects of cooling on the quality of strawberries." *Rpt. of the Comm. on Hort. Res.* Can. Hort. Council. pp. 93-94.

Smith, R.B., F.I. Cook and V.P. Gray. (1982) "Effects of containers and cooling methods on post storage quality of asparagus." *Rpt. of the Comm. on Hort. Res.* Can. Hort. Council. p. 95.

Smith, R.B., F.I. Cook and V.P. Gray. (1982) "Evaluation of factors affecting the quality of asparagus retailed in pyramid packs." *Rpt. of the Comm. on Hort. Res.* Can. Hort. Council. pp. 94-95.

Tehrani, G. (1982) "Plums and their potential." *The Grower.* 32(4):7.

Tehrani, G. (1982) "'Veeblue' a new European plum variety." *Great Lakes Fruit Growers News.* 21(4):37.

Tehrani, G. (1982) "'Veeblue' — attractive new European plum variety." *Can. Fruitgrower.* 38(4):27.

Tehrani, G., K.H. Fisher, S.J. Leuty and N.W. Miles. (1982) "Distribution of propagating material from superior stock program." *Rpt. of the Comm. on Hort. Res.* Can. Hort. Council. pp. 89-90.

Tehrani, G. and J.W. Lay. (1982) "Influence of different selections of P. Mahaleb rootstock on growth of two tart cherry cultivars." *Rpt. of the Comm. on Hort. Res.* Can. Hort. Council. p. 90.

Tehrani, G. and J.W. Lay. (1982) "Influence of MXM #14, P. mahaleb and P. mazzard rootstock on growth and productivity of sweet and tart cherry cultivars." *Rpt. of the Comm. on Hort. Res.* Can. Hort. Council. p. 90.

Tehrani, G. and J.W. Lay. (1982) "Influence of spacing and rootstock on yield on Montmorency tart cherry." *Rpt. of the Comm. on Hort. Res.* Can. Hort. Council. p. 90.

Tehrani, G. and J.W. Lay (1982) "Management studies with Bartlett on Quince A. rootstock." *Rpt. of the Comm. on Hort. Res.* Can. Hort. Council. pp. 90-91.

Tehrani, G. and J.W. Lay. (1982) "Management studies with Bartlett on standard rootstock." *Rpt. of the Comm. on Hort. Res.* Can. Hort. Council. p. 91.

Tehrani, G. and J.W. Lay. (1982) "Veeblue a new European plum cultivar." *Rpt. of the Comm. on Hort. Res.* Can. Hort. Council. p. 89.

Toivonen, P.M.S., E.C. Lougheed, D.P. Murr and A. Loughton. (1982) "Ethylene and the controlled atmosphere (CA) storage of leafy vegetables." *Rpt. of the Comm. on Hort. Res.* Can. Hort. Council. p. 128.

Valk, M. (1982) "Cavity spot in carrots." *The Grower.* 32(5):12.

Valk, M. (1982) "Grower's corner." (52 weekly articles) *Bradford Witness, New Market Era, King Township Weekly, Record Sentinel,* and *Aurora Banner.*

Valk, M. (1982) "Valk on vegetables." (52 weekly articles) *Bradford Witness, New Market Era, King Township Weekly, Record Setinel,* and *Aurora Banner.*

Valk, M. and E.N. Knibbe. (1982) "Cauliflower cultivar trials, 1981." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 101.

Valk, M. and E.N. Knibbe. (1982) "Celery treatment storage trial, 1981." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 101.

Valk, M. and E.N. Knibbe. (1982) "Early celery tunnel trials, 1981." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 100.

Valk, M. and E.N. Knibbe. (1982) "Early celery tunnel trials, 1982." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 104.

Valk, M. and E.N. Knibbe. (1982) "Effect of potash on storage quality of celery, 1981." *Rpt. of Comm. on Hort. Res.* Can. Hort. Council. p. 101.

PROCEEDINGS

Blom, T.J. and F.J. Ingratta. (1982) "The effect of infrared heating on leaf temperature and roses." (Abstr.) *Proc. Can. Soc. Hort. Sci.* Vancouver, B.C., July. p. 21.

Chudyk, R.V. (1982) "Computer analysis of a horticultural crop." *Proc. Seventeenth Ann. Symp., West. New York Sect. — IFT and Inst. of Food Sci.* Cornell Univ., Rochester, N.Y., Nov. pp. 6-10.

Chudyk, R.V. (1982) "Effect of grape protection agents on industrial yeasts." (Abstr.) *Proc. Ann. Mtg. and Seminar, Can. Soc. Oenologists.* Jordan Stn., June. p. 7.

Chudyk, R.V., A. Seaman and M. Woodbine. (1982) "Low temperature effects on yeast spores." *Proc. Soc. for Applied Bacteriology Conf.* Univ. of Technology, Loughborough, U.K., July p. 49.

Elfving, D.C., C.G. Forshey and G.H. Collin. (1982) "Effects of chemically-induced lateral branching on growth and cropping of young apple trees." (Abstr.) *21st Intl. Hort. Congress.* Hamburg, Fed. Rep. of Germany, Aug.-Sept. 2:2022a.

Fisher, K.H. (1982) "Photosynthetic response of five grape cultivars to changes in light levels." (Abstr.) *Proc. Ann. Mtg. and Seminar Can. Soc. Oenologists.* Jordan Stn., June. p. 2.

Gray, V.P. (1982) "Assessing the performance of individual tasters on sensory evaluation tasks." (Abstr.) *Proc. Ann. Mtg. and Seminar Can. Soc. Oenologists.* Jordan Stn., June. p. 9.

Loughton, A. (1982) "Regional director's report — Eastern Region" *Proc. Can. Soc. Hort. Sci.* Vancouver, B.C., July. p. 8.

Loughton, A. (1982) "Vegetable production — a prescription for profit." *Vegetable and Potato Producers' Assn. Ann. Rpt.* Kentville, N.S., March. pp. 27-33.

Loughton, A. (1982) "Vegetables 200 - the challenge of change." *Vegetable and Potato Producers' Assn. Ann. Rpt.* Kentville, N.S., March. pp. 41-56.

O'Sullivan, J. (1982) "Herbicides for nightshade (Solanum americanum Mill.) control in peppers and tomatoes." (Abstr.) *Weed Sci. Soc. Amer. Conf.* St. Louis, MO, Feb. p. 34.

Tehrani, G. (1982) "Review of sweet and tart cherry breeding program in Ontario." *Proc. Intl. Cherry Res. Conf.* Traverse City, MI, Feb. pp. 33-34.

Toivonen, P.M.A., E.C. Lougheed and A.W. Loughton. (1982) "Controlled atmosphere storage of some cole crops." (Abstr.) *Proc. Can. Soc. Hort. Sci.* Vancouver, B.C., July. p. 27.

BOOKS, THESES, REPORTS

Blom, T.J. and B.D. Piott. (1982) *Feasibility study of nutrient film technique (NFT) on cut flower production.* Progress Rpt. Cecil Delworth Foundation, Flowers Can. April. 2 pp.

Blom, T.J. and F.J. Ingratta. (1982) *Economic feasibility of infrared heating in greenhouses.* Progress Rpt. Cecil Delworth Foundation, Flowers Can. April. 2 pp.

Blom, T., and F. Ingratta. (1982). *Energy conservation in Ontario greenhouses.* OMAF Publication 65.

Chudyk, R.V. (1982) *Ontario grape crush analysis — 1981.* HPL Tech. Rpt. HRIO. Vineland, April. 56 pp.

Chudyk, R.V. (1982) *Sugar analysis of selected commercial grapes 1979-1981.* HPL Tech. Rpt. HRIO, Vineland, May. 19 pp.

Courtney, W.H., E.A. Kerr, G.E. Reaume, V.P. Gray, P.K. Deitch, J.G. Metcalf, D. Craven, J.K. Muehmer, and R. Garton. (1982) *Tomato cultivar trials, 1982.* Res. Rpt. No. 60 Hort. Exp. Stn., Simcoe, Dec. 40 pp.

Croft, B.A., D.C. Elfving and J.A. Flore. (1983) "IPM and fruit-tree physiology and growth." *Integrated Management of Insect Pests of Pome and Stone Fruit.* Eds. B.A. Croft and S.C. Hoyt. New York: John Wiley & Sons. pp. 67-92.

Dutton, R., J. Tsujita and T. Blom. (1983) *Commercial evaluation of acrylic (SDP) glazing.* Final report. Contract No. 60432. OME and OMAF. Mar. 21 pp.

Elfving, D.C. "Crop response to trickle irrigation." *Horticultural Reviews, Vol. 4.* Ed. J. Janick. Westport, CO.: AVI Publ. Co. Inc. pp. 1-48.

Elfving, D.C. (1982) *The deciduous-fruit research program in Ecuador: Progress Report II.* Rpt. to the Intl. Agric. Dept. Service. Washington, D.C. 33 pp.

Elfving, D.C., S.M. Welch and G.R. Kroh. (1983) "Apple tree modeling and IPM." *Integrated Management of Insect Pests of Pome and Stone Fruit.* Eds. B.A. Croft, S.C. Hoyt. New York; John Wiley & Sons. pp. 271-307.

Fisher, K.H. (1982) *Dessert grapes for the home garden*. OMAF gardening kit.

Fisher, K.H. (1982) *Grapes adapt well to small gardens*. OMAF gardening kit.

Fleming, R.A. (1982) *Good garden sense beats garden gadgets*. OMAF gardening kit.

Fleming, R.A. (1982) *No need to sacrifice flowers for vegetables*. OMAF gardening kit.

Fuleki, T. and A.V. Hubberstey. (1982) *Quality of commercial grape concentrates*. HPL Tech. Rpt. HRIO, Vineland. 27 pp.

Fuleki, T. and P.T. Dick. (1982) *Fermentation trial with De Chaunac and Marechal Foch concentrates*. HPL Tech. Rpt. HRIO, Vineland. 26 pp.

Gray, V.P. (1982) "Processing research." *Rpt. of the Processing Strawberry Field Day*. Kent and Norfolk Counties, Sept. Unpaginated.

Gray, V.P. (1983) *Report of the operation of Ontario Wine Standards Taste Panels — 1982*. HPL Tech. Rpt. HRIO, Vineland. 17 pp.

Gray, V.P., O. Friesen, B. Bannerman, S. Posthumas, E. Fedorkow and N.W. Miles. (1982) *Rpt. of the processing sect. of the Processing Strawberry Research Corporation. 1982 processing season*. Vineland, Nov. 53 pp.

Hergert, G.B., N.W. Miles and A. Vandenberg. (1982) *Mechanized strawberry production with solid-set planting*. Agric. Canada. Engng. & Stat. Res. Inst. Rpt. 1-416. Ottawa. 19 pp.

Ingratta, F.J. and T.J. Blom. (1982) *Evaluation and comparison of three different greenhouses*. Rpt. to Agric. Can. June. 9 pp.

Ingratta, F.J. and T.J. Blom. (1982) *Second year report, greenhouse vegetable production and energy conservation*. Ont. Lottery Commission. May. 17 pp.

Ingratta, F.J. and T.J. Blom. (1982) *Vegetable cultivar trials. 1982*. Tech. Rpt. HRIO, Vineland. 10 pp.

Loughton, A., R. Baker, A. McKeown and L. Reynolds. (1982) *Vegetable cultivar trials — 1982*. Res. Rpt. No. 62 Hort. Exp. Stn., Simcoe, Dec. 54 pp.

McKeown, A.W. (1982) *Increasing the effectiveness of 1-Triacontanol applied to plants*. Ph.D. Thesis. Michigan State Univ., Aug.

Miles, N. (1982) "Establishment of a processing strawberry industry." *Rpt. of Processing Strawberry Field Day*. Kent and Norfolk Counties, Sept. Unpaginated.

Miles, N. (1983) *Strawberry culture in narrow rows on raised beds*. Rpt. to North Amer. Strawberry Growers' Assn.

Miles, N. (1982) "The processing strawberry research program." *Rpt. of Processing Strawberry Field Day*. Kent and Norfolk Counties, Sept. Unpaginated.

Miles, N., and A. Vandenberg. (1982) "Guidelines for solid bed strawberry culture." *Rpt. of Processing Strawberry Field Day*. Kent and Norfolk Counties, Sept. Unpaginated.

Miles, N., A. Vandenberg, and C. Chandler (1982) "Production research." *Rpt. of Processing Strawberry Field Day*. Kent and Norfolk Counties, Sept. Unpaginated.

O'Sullivan, J. and W.J. Bouw. (1982) *Herbicide research report*. Res. Rpt. No. 63 Hort. Exp. Stn., Simcoe, Dec. 20 pp.

O'Sullivan, J. and W.J. Bouw and W.T. Sturkenboom. (1982) *Ontario pickling cucumber and pepper cultivar trials*. Res. Rpt. No. 61. Hort. Exp. Stn., Simcoe, Dec. 32 pp.

Smith, R.B. (1983) *Cooling trials with three litre baskets and masters*. HPL Tech. Rpt. HRIO, Vineland, Feb. 3 pp.

Smith, R.B. (1983) *Effects of cooling methods on post-storage quality of asparagus*. HPL Tech. Rpt. HRIO, Vineland. Feb. 10 pp.

Smith, R.B. (1983) *Effects of in container vegetables on quality of asparagus after storage in pyramid pacts*. HPL Tech. Rpt. HRIO, Vineland, Feb. 8 pp.

Smith, R.B. (1982) *Improving the quality of Ontario peaches for the fresh market*. HPL Tech. Rpt. HRIO, Vineland, Oct. 3 pp.

Smith, R.B. (1983) *The improvement of cranberry growing in Ontario*. HRIO, Vineland. Tech. Rpt. Mar. 9 pp.

Tehrani, G. (1982) *New Ontario plums for fresh market*. OMAF news release. Nov.

Valk, M. and E.N. Knibbe. (1983) *1980-82 Muck Research Station Annual Report*. Kettleby, March. 41 pp.

Valk, M. and E.N. Knibbe. (1983) *1982 Muck Vegetable Cultivar Trials Annual Report*. Muck Res. Stn. Kettleby, Feb. 51 pp.

PRESENTATIONS

Blom, T.J. (1983) Roses. Niagara Coll. Greenhouse Growers' Night School. Mar.

Blom, T.J. (1982) Working with soilless mixes. Can. Greenhouse Conf. Univ. of Guelph, Nov.

Blom, T. J. and F. J. Ingratta. (1983) Energy efficiency and optimal environmental conditions for greenhouse crop production. Poster session, Energo '83. Toronto, Mar.

Chu, C.L. (1982) Atmospheric analysis. Controlled Atmosphere Storage School. Univ. of Guelph, June.

Chudyk, R.V. (1982) Development of grape sugar standards in Ontario. *The Eastern Grape Grower* and *Winery News* Summer Seminar for Wine growers. Vineland Stn., Apr.

Chudyk, R.V. (1982) General statistics on the quality of the 1981 grape crop in Ontario. Ont. Grape Growers' Mktg. Bd. Grape Advisory Mtg. Vineland Stn., Apr.

Chudyk, R.V. (1982) Microbiological quality control. Ont. Wine Ind. Workshop. Vineland Stn., May.

Chudyk, R.V. (1982) Microbiology lab programs at H.P.L. Grape and Wine Res. Comm. Mtg. Vineland Stn., Nov.

Chudyk, R.V. (1983) Preliminary analysis of the commercial De Chaunac harvest in Ontario. Ont. Grape Growers' Mktg. Bd. Grape Advisory Mtg. Vineland Stn., Jan.

Chudyk, R.V. (1982) Quality analysis of selected commercial grapes over a three year period. Ont. Grape Growers Mktg. Bd. Grape Advisory Mtg. Vineland Stn., May.

Chudyk, R.V. (1982) Quality analysis of the 1981 grape crush in Ontario. Ont. Wine Ind. Workshop. Vineland Stn., May.

Chudyk, R.V. (1982) Review of procedures for measuring sugar content of grapes. Grape Standards Sub-Committee Mtg. Vineland Stn., June.

Chudyk, R.V. (1982) Wine and grape research in Ontario. Wine Council of Ont. 5th Ann. Wine Educ. Seminar. Seneca Coll., Jan.

Cline, R.A. (1983) A comprehensive look at grape nutrition. Ohio Grape and Wine Short Course. Columbus, OH, Feb.

Cline, R.A. (1982) Atomic absorption techniques. Ont. Wine Industry Workshop. Vineland Stn., May.

Cline, R.A. (1982) Cultural practices in peach canker development. Stone Fruit Decline Workshop. East Lansing, MI, Oct.

Cline, R.A. (1983) Fertilizer considerations for apples. Apple Pest Mgmt. Short Course. Simcoe, Mar.

Cline, R.A. (1983) Managing your soils now and for the future. Ohio Grape and Wine Short Course. Columbus, OH, Feb.

Cline, R.A. (1982) Petiole analyses for grapes. Grape 4H Club. Vineland Stn., July.

Cline, R.A. (1982) Research with pome fruits at HRIO. Pome Fruit Research Comm. Ann. Mtg. Simcoe, Nov.

Cline, R.A. (1983) Soil management for fruit crops. Niag. Pen. Fruit and Veg. Growers Night School. Vineland Stn., Feb.

Cline, R.A. (1982) Soil management research with grapes at HRIO. Niag. Grape Growers Twilight Mtg. Vineland Stn., Sept.

Cline, R.A. (1982) Soil management studies with peaches. Ann. Mtg. West. Ont. Fruit Testing Assn. Ridgetown, Jan.

Courtney, W.H. (1983) Overview of world tomato production. Processing Tomato Production Short Course. Dover, Jan.

Courtney, W.H. (1982) Ripening disorders of tomatoes. 27th Ann. Whole Pack Evaluation Day. Harrow, Nov.

Courtney, W.H. (1982) Tomato breeding at Simcoe. Ont. Veg. Growers' Mktg. Bd. Wainfleet, Oct.

Courtney, W.H. (1982) Tomato breeding in Ontario. 10th North Amer. Tomato Conf. Chatham, Nov.

Courtney, W.H. (1982) Tomato breeding research at Simcoe, 1982. Ont. Veg. Growers' Mktg. Bd. Ann. Conv. Chatham, Nov.

Courtney, W.H. (1983) Tomato breeding research in 1983. Veg. Info. Mtg. Simcoe, Mar.

Elfving, D.C. (1983) Apple growing in tropical countries. Northeast Apple Soc. Ann. Mtg. Carrabassett, MA, Mar.

Elfving, D.C. (1982) Apple rootstock performance in Ontario. New England Fruit Mtg. Concord, NH, Jan.

Elfving, D.C.(1983) Apple rootstocks in Ontario. Northeast Apple Soc. Ann. Mtg. Carrabassett, MA, Mar.

Elfving, D.C. (1982) Apple variety and rootstock management in Eastern Ontario. Northumberland and Durham Apple Growers Assn. Ann. Mtg. Port Hope, Dec.

Elfving, D.C. (1982) Concepts in dormant pruning. Apple Info. Day. KCAT, Apr.

Elfving, D.C. (1983) Effect of pruning on fruit quality. Apple Pruning Workshop. Lambeth, Feb.

Elfving, D.C. (1982) Growth regulators in apple production. Uniroyal Apple Growers Info. Mtg. Kentville, N.S., May.

Elfving, D.C. (1982) Growth regulators in apple production. Uniroyal Apple Growers Info. Mtg. Meaford, Trenton, May.

Elfving, D.C. (1983) Improving fruit size and quality. Norfolk Fruit Growers Assn. Mtg. Simcoe, Feb.

Elfving, D.C. (1982) Introduction to computer modelling-pomological applications. Pomology Working Group, Amer. Soc. for Hort. Sci. Ann. Mtg. Iowa State Univ., Ames, IA, Aug.

Elfving, D.C. (1983) Management of tree growth. Oxford Apple Day. Woodstock, Feb.

Elfving, D.C. (1982) Managing M.26 rootstock. Apple Info. Day. KCAT, Apr.

Elfving, D.C. (1982) Pruning apple trees on the M.26 rootstock. Pruning demonstration. Vineland Stn., Apr.

Elfving, D.C. (1982) Summer pruning of apples. Pruning demonstration. Bowmanville, Aug.

Elfving, D.C. (1982) Summer pruning of apples. Pruning demonstration. Milton, Aug.

Elfving, D.C. (1982) Technology and agriculture in developing countries. Simcoe Composit School Geog. Class. Simcoe, Nov.

Elfving, D.C. (1982) Trickle irrigation of apple trees. New Eng. Fruit Mtgs. Concord, NH, Jan.

Elfving, D.C. (1982) Use of growth regulators in apple production. Apple Growth Regulator Mtg. Essex-Kent counties. Ruthven, Apr.

Fisher, K.H. (1982) Maximizing quality of grapes at the field level. Ont. Wine Ind. Workshop. Vineland Stn., May.

Fleming, R.A. (1982) Holly. Niagara Coll., June.

Fuleki, T. (1982) Chemical quality control. Ont. Wine Ind. Workshop. Vineland Stn., May.

Fuleki, T. (1982) Chemistry of wine colour. Ont. Wine Ind. Workshop. Vineland Stn., May.

Fuleki, T. (1982) Colour and flavour research on grape and wine. *Eastern Grape Grower* and *Winery News* Summer Seminar for Wine growers. Vineland Stn., Aug.

Fuleki, T. (1982) Report on wine and juice research at the biochemistry laboratory. Grape and Wine Res. Comm. Mtg. Vineland Stn., Nov.

Gray, V.P. (1982) Development and implementation in Ontario of quality standards in the grape and wine industry. *Eastern Grape Grower* and *Winery News* Summer Seminar. Vineland Stn., Aug.

Gray, V.P. (1982) Report of the Ontario Wine Standards Tasting Committee Grape and Wine Res. Comm. Mtg. Vineland Stn., Nov.

Gray, V.P. (1982) Report on strawberry processing research in cooperation with the Processing Strawberry Research Corporation. Ont. Small Fruit Crops Res. Comm. Mtg. Vineland Stn., Nov.

Gray, V.P. (1982) Report on the evaluation of tomatoes processed in 1982 as juice and whole pack. Ont. Tomato Res. Comm. Mtg. Ridgetown, Dec.

Gray, V.P. (1982) Sensory testing: Choosing the appropriate method. Ont. Wine Ind. Workshop. Vineland Stn., May.

Gray, V.P. (1983) Wine evaluation. 4th Ann. Wine Council of Ont. Wine Educ. Seminar. Seneca Coll., Jan.

Gray, V.P. (1982) Wine evaluation workshop. LCBO Ann. Seminar. Vineland Stn., Oct.

Gray, V.P. (1982) Wine evaluation workshop. Niagara Grape Growers Action Comm. Workshop. Vineland Stn., Sept.

Gray, V.P. and J.T. Challen.(1983) Wine evaluation workshop. LCBO Wine Consultants Workshop. Vineland Stn., Mar.

Gray, V.P., O. Friesen, B. Bannerman, S. Posthumas, E. Fedorkow and N.W. Miles. (1982) Report of the processing section of the Processing Strawberry Corp. - 1982 processing season. Simcoe, Nov.

Ingratta, F. J. (1982) Commercial mushroom research in Canada. Toronto Mycological Soc. Mtg. Toronto, Sept.

Ingratta, F. J. (1982) Effects of bacterial population dynamics and volatile production on mushroom fruiting. Pathology Seminar Series. Univ. of Toronto, Mar.

Ingratta, F. J. (1982) Greenhouse energy conservation technology. Sir Sanford Fleming Coll., June.

Ingratta, F. J. (1982) Greenhouse vegetables research. HRIO Open House. Vineland Stn., Apr.

Leuty, S.J. and N.W. Miles. (1983) Peaches under plastic - will it pay? Intl. Dwarf Fruit Trees Assn. Ann. Mtg. Rochester, N.Y., Mar.

Loughton, A. (1983) California perspective. Norfolk and Brant Veg. Growers' Day. Simcoe, Mar.

Loughton, A. (1983) Cole crop production in California. Ont. Hort. Conf. Toronto, Feb.

Loughton, A. (1983) Cole crop research at Simcoe. Norfolk and Brant Veg. Growers' Day. Simcoe, Mar.

Loughton, A. (1982) Cole crop research update. Norfolk and Brant Veg. Growers' Day. Simcoe, Feb.

Loughton, A. (1983) Cole crop variety update for 1983. Ont. Hort. Crops Conf. Toronto, Feb.

Loughton, A. (1982) Import replacement, future food requirements and our research. Norfolk Junior Farmers Mtg. Simcoe, April.

Loughton, A. (1983) Small fruit research at Simcoe. Ont. Hort. Conf. Toronto, Feb.

Loughton, A. (1983) The home vegetable gardener and our research programs. Simcoe and District Hort. Soc. Mtg. Simcoe, Feb.

Loughton, A. (1982) Our research programs and the home gardener. Port Dover and Woodhouse Hort. Soc. Mtg. Port Dover, Mar.

Loughton, A. (1982) Our research programs and the home gardener. Waterford Hort. Soc. Mtg. Waterford, Feb.

McKeown, A.W. (1983) Potato research update. Norfolk and Brant Veg. Growers' Day. Simcoe, Mar.

McKeown, A.W. (1983) Seed potatoes from test tubes in Ontario. Ont. Hort. Conf. Toronto, Feb.

McKeown, A.W. (1982) Tissue culture in the production of seed potatoes Ont. Seed Potato Growers' Assn. Ann. Mtg. Cambridge, Nov.

McKeown, A.W. (1983) Tomato production research. Norfolk and Brant Veg. Growers' Day. Simcoe, Mar.

Miles, N.W. (1983) Progress report on Strawberries for Processing Project. Ont. Hort. Conf. Toronto, Feb.

Miles, N.W. (1982) Strawberry Processing - a reviving industry? Niag. Pen. Fruit and Veg. Assn. Ann. Mtg. Niagara Falls, Dec.

Miles, N.W. (1983) Superior plants for superior growers. Ont. Fruit and Veg. Growers Assn. Conv. Toronto, Jan.

O'Sullivan, J. (1983) Cucumber production. Bick's Grower Mtg. Stoney Point, Feb.

O'Sullivan, J. (1982) Evaluation of various methods for early-season production of cucumbers. Pickling Cucumber Improvement Comm. Mtg. Raleigh, NC, Sept.

O'Sullivan, J. (1983) Galinsoga weed control in crucifers. Ont. Hort. Conf. Toronto, Feb.

O'Sullivan, J. (1983)Herbicides for nightshade control in peppers and tomatoes. Weed Sci. Soc. of Amer. Ann. Mtg. St. Louis, MO, Feb.

O'Sullivan, J. (1983) Pepper research at Simcoe. Norfolk Veg. Growers' Mtg. Simcoe, Mar.

O'Sullivan, J. (1983) Weed control in asparagus. Asparagus Growers' Mtg. Delhi, Mar.

Smith, R.B. (1982) Evaluation of in container variables on the quality of asparagus. Ann. Mtg. of Ont. Asparagus Growers. London, Nov.

Smith, R.B. (1982) Evaluation of marketing factors affecting quality of asparagus. Ann. Mtg. of Ont. Asparagus Growers. London, Nov.

Smith, R.B. (1982) Evaluation of various cooling methods on the quality of asparagus. Ann. Mtg. of Ont. Asparagus Growers. London, Nov.

Smith, R.B. (1982) Post-harvest handling of fruits and vegetables in California. Ann. Mtg. of Niag. Pen. Fruit and Veg. Growers Assn. Niagara Falls, Dec.

Smith, R.B. (1983) Post-harvest horticulture in California. Vineland Men's Club. Vineland, Jan.

Tehrani, G. (1983) Plum varieties. Essex Co. Assn. Growers 32nd Ann. Conv. Leamington, Jan.

Tehrani, G. (1982) Variety update - plums, cherries and pears. Niag. Pen. Fruit and Veg. Growers' Assn. Ann. Mtg. Niagara Falls, Dec.

Valk, M. (1983) Canada trade with the U.S.A. and the rest of the world. West. New York State Hort. Show, Rochester, NY, Jan.

Valk, M. (1983) Growing home garden vegetables. Orillia Hort. Soc. Mtg. Orillia, Mar.

Valk, M. (1982) Home garden vegetables, Uxbridge Hort. Soc. Mtg. Uxbridge, April.

Valk, M. (1982) Management of muck crops. Symposium 1982 on Peat and Peatlands. Shippagan, N.B., Sept.

Valk, M. (1982) Muck crop producion and marketing in Ontario. Netherlands Trade Mission. Alliston, Nov.

Valk, M. (1982) Muck vegetable production. OAC Field Studies. Bradford, Aug.

Valk, M. (1982) New development in muck crop research. Ann. Open House, Muck Res. Stn. Bradford, Aug.

Valk, M. (1982) 1981 in review. 1981 Research Rpt. Raised bed systems for muck crops. Production and marketing of Florida carrots. 31st Ann. Muck Veg. Growers Conf. Bradford, Apr.

Valk, M. (1983) Soil testing and muck crops storage. Thedford-Grand Bend Growers Assn. Ann. Mtg. Grand Bend, Mar.

Valk, M. (1983) Soil testing and storage of muck crops. Essex Co. Growers' Assn. Ann. Conv. Leamington, Jan.

Valk, M. (1982) Subsidence of muck soils. Ont. Food Processor Fieldmen's Conf. Guelph, May.

Valk, M. (1982) Vegetable growing in home gardens. Beeton Hort. Soc. Mtg. Beeton, May.

Valk, M. (1982) What's new in muck vegetable production. Rotary Club Mtg. Bradford, Aug.

AUDIO VISUAL

Chu, C.L. (1983) Ontario apple supply throughout the winter. OMAF video tape. Mar.

Courtney, W.H. (1982) Breeding disease resistant tomatoes. OMAF radio tape. Nov.

Courtney, W.H. (1982) Breeding tomatoes for earliness. OMAF radio tape. Nov.

Courtney, W.H. (1982) Tomato breeding. CHNR Radio. Simcoe, Sept.

Fleming, R.A. (1982) Growing together. 110 CHRE Radio tapes. St. Catharines.

Fleming, R.A. (1982) Growing together. 110 OMAF radio tapes.

Fleming, R.A. (1982) Lawn care. Grimsby Cable TV. Grimsby. May.

Fleming, R.A. (1982) Pruning flowering shrubs. Grimsby Cable TV. Grimsby, May.

Fleming, R.A. (1982) Weekly garden program. CHSC Radio. St. Catharines.

Ingratta, F.J. (1982) Expanded greenhouse research at Vineland. CBC Radio. Toronto, Aug.

Ingratta, F.J. (1982) Greenhouse research at Vineland. CHCH-TV. Hamilton, Aug.

Ingratta, F.J. (1982) Mushroom research at Vineland. OMAF video tape. Mar.

Loughton, A. (1982) Current research review. OMAF video tape. Aug.

O'Sullivan, J. (1983) Osmoconditioning of pepper seed. CHCH-TV. Hamilton, Mar.

Valk, M. (1982) Marsh vegetables. CKVR TV. Barrie, May.

Valk, M. (1982) Holland marsh vegetable production. OMAF video tape. June.

Kemptville College of Agricultural Technology

PERIODICALS

Curnoe, W.E. (1982) "Crop rotation: an old practice revitalized." *Highlights Agric. Res. Ont.* 5(4): 3-4.

Drevjany, L.A. and P.L. Johnson (1983) "Cream of the crop in veal." *Highlights Agric. Res. Ont.* 6(1): 10-13.

Drevjany, L.A., E. Donefer and L. Latrille. (1982) "Feeding of fermented colostrum to neonatal calves. IV. Effect of energy supplementation of fermented colostrum on protein utilization." *Can. J. Anim. Sci.* 62: 439-48.

Hoekstra, G.J. (1983) "New prospects in spring cereal varieties." *Contact.* 8(4): 2.

Johnson, P.L. (1983) "Linking through representation." *Can. Home Ec. J.* 33(2): 54-55.

Langenberg, W.J. (1983) "Syrup research saves money." *Contact.* 8(3): 2.

MacDonald, D.W. and E.W. Hicks (1982) "Annual weed control in barley and oats." *Exp. Comm on Weeds Res. Rpt.: East. Sect.* p. 21.

MacDonald, D.W. and E.W. Hicks (1982) "Annual weed control in corn." *Exp. Comm on Weeds Res. Rpt.: East. Sect.* pp. 124-26.

MacDonald, D.W. and E.W. Hicks (1982) "Mustard control in establishing direct-seeded alfalfa and trefoil." *Exp. Comm on Weeds Res. Rpt.: East. Sect.* p. 53.

MacDonald, D.W. and E.W. Hicks (1982) "Nutsedge control in corn." *Exp. Comm on Weeds Res. Rpt.: East. Sect.* p. 471.

MacDonald, D.W. and E.W. Hicks (1982) "Quackgrass control in a non crop area." *Exp. Comm on Weeds Res. Rpt.: East. Sect.* p. 470.

MacDonald, D.W. and E.W. Hicks (1982) "Quackgrass control in soybeans." *Exp. Comm on Weeds Res. Rpt.: East. Sect.* p. 472.

MacDonald, D.W. and E.W. Hicks (1982) "Weed control in soybeans." *Exp. Comm on Weeds Res. Rpt.: East. Sect.* pp. 196-98.

MacDonald, D.W. and E.W. Hicks (1982) "Weed control treatments for establishing direct seeded stands of alfalfa and trefoil." *Exp. Comm on Weeds Res. Rpt.: East. Sect.* p. 52.

Meagher, T.G. (1982) "Grads still rate farming choice one." *Contact.* 9(3): 4.

Meagher, T.G. (1982) "Lowbush blueberries - an encouraging start." *Contact.* 8(2): 1.

Meagher, T.G. (1982) "Report on research." *Contact.* 8(2): 2.

Meagher, T.G. (1982) "Soybeans better in the east." *Contact.* 8(3): 4.

Meagher, T.G. (1983) "The role of food additives." *Contact.* 8(4): 4.

Meagher, T.G. (1982) "Where have all the engineering technicians gone?" *Contact.* 8(3): 4.

Meagher, T.G. (1982) "Winds of change in agriculture." *Report on Farming.* 102(5): 27.

Raithby, G.D. and W.J. Langenberg. (1982) "The economizer, did it pan out?" *Amer. Maple J.* April. pp. 10-11.

Reasbeck, L.M. (1982) "Food service students have no worry about employment." Interview. *Ottawa Citizen.* Dec. 27

Reasbeck, L.M. (1982) "Home economics instructor." Interview. *Reed Career Service.* 4(1): 27.

Reasbeck, L.M. (1982) "Report of the American region." *Intl. Fed. for Home Ec.* Dec. p. 5.

Vandenberg, J. (1982) "Cultivated lowbush blueberries - a new crop for Ontario." *Highlights Agric. Res. Ont.* 5(3): 1-3.

PROCEEDINGS

Clark, J.H. and J.R. Gillespie. (1982) "Field experience with a tractor monitor." *Proc. of Am. Soc. of Agric. Engng.* Chicago, IL, Dec. Paper No. 82-3536.

Curnoe, W.E. (1983) Forage fertilization. *East Ont. Farmers' Wk.* KCAT, Feb.

Hooper, G.S. (1983) "Complete rations - are they the most efficient?" *East. Ont. Dairy Day.* KCAT, Feb.

MacDonald, D.W. (1983) "Reducing production costs with weed control." *East Central Crops Day.* Lindsay, Jan.

MacDonald, D.W. (1983) "Triazine resistant weeds." *East. Ont. Farmers' Wk.* KCAT, Feb.

BOOKS, THESES, REPORTS

Johnson, P.L. (1982) *The food service supervision program at Kemptville College of Agricultural Technology.* Ont. Dietetic Assn. Feb.

Langenberg, W.J. (1983) *Lanark maple syrup producers advertise their product.* East. Ont. news release. Feb.

Langenberg, W.J. (1982) *Manure - a valuable fertilizer.* East Ont. news release. Sept.

Langenberg, W.J. (1982) *Tomatoes - grown in plastic tunnels.* East. Ont. news release. June.

Langenberg, W.J. (1982) *Vegetable variety trials at KCAT.* East. Ont. news release. Aug.

McEwen, P.L. (1982) *Buying the plus cow.* East Ont. news release. June.

Meagher, T.G. (1982) *Future of embryo transfer has arrived.* East. Ont. news release. Nov.

Vandenberg, J. (1981) *Eastern Ontario strawberry crop promising.* East. Ont. news release. June.

PRESENTATIONS

Clark, J.H. (1982) Chairman's report computers application committee. Canada Comm. of Agric. Services. Fredericton, N.B., Nov.

Curnoe, W.E. (1982) Corn hybrids and corn hybrid licencing selection. Lanark Co. SCIA. Pakenham, July

Curnoe, W.E. (1983) Forage fertilization. UCO Day. Mallorytown, Feb.

Curnoe, W.E. (1983) Managing your forage crop. UCO Day. Elginburg, Feb.

Curnoe, W.E. (1982) Manure utilization for crop production. Carleton Co. Manure Day. Carsonby, Apr.

Curnoe, W.E. (1982) Micronutrients. TFIO Workshop. KCAT, July.

Curnoe, W.E. (1982) Soil erosion concerns. Stormont Co. Crops Club. Cornwall, May.

Curnoe, W.E. (1982) Soils for septic systems. Leeds, Grenville, Lanark Health Unit. Kemptville, June.

Curnoe, W.E. (1982) The importance of proper tillage practices. Grenville Co. 4-H Club. Kemptville, May.

Curtis, J.D. and L.M. Reasbeck (1982) Diploma programs and research projects at Kemptville. Canadian Club. Morrisburg, April.

Drevjany, L.A. (1983) Growth promotants and management of heavy calves. East. Ont. Heavy Calf Day. KCAT, Feb.

Drevjany, L.A. (1983)Growth promotants and production of heavy calves. P.E.I. Dairy Days. Charlottetown, P.E.I., Jan.

Drevjany, L.A. (1983) Overquota milk for calves. Glengarry Co. Holstein Breeders' Ann. Mtg. Alexandria, Mar.

Drevjany, L.A. (1983) Starting the replacement calf. P.E.I. Dairy Days. Charlottetown, P.E.I., Jan.

Drevjany, L.A. (1983) The importance of colostrum in calf nutrition. P.E.I. Dairy Days. Charlottetown, P.E.I., Jan.

Drevjany, L.A. (1983) Use of goat milk in veal production. Rideau Valley Goat Producers' Assn. Mtg. KCAT, Jan.

Drevjany, L.A. (1983) What's new in calf research? Farm Business for Farm Women Conf. KCAT, Jan.

Hoekstra, G.J. (1983) Management practices for growing quality corn. Canada Starch Co. Corn Growers' Mtg. Cardinal, Feb.

Hoekstra, G.J. (1983) What's new in crop production? Farm Business for Farm Women Conf. KCAT, Jan.

Hoekstra, G.J. (1983) Winter wheat production in Eastern Ontario. Frontenac Co. Wheat Producers' Assn. Ann. Mtg. Gananoque, Feb.

Hooper, G.S. (1983) Agricultural education in Eastern Ontario. Cumberland Fair Bd. Ann. Mtg. Cumberland, Jan.

Hooper, G.S. (1983) Agricultural education in Eastern Ontario. Russell Agric. Soc. Ann. Mtg. Russel, Jan.

Hooper, G.S. (1982) Beef and grain marketing in Eastern Ontario. Bankers' Forum. KCAT, Nov.

Hooper, G.S. (1983) Raising newborn calves. Farm Womens' Conf. Kingston, Feb.

Hudgin, R.A. (1983) Evaluating financial case studies. Co. 4-H Farm Financial Mgt. Course. Winchester, Mar.

Hudgin, R.A. (1983) Survey of available farm record systems. Part-time Farmers' Conf. KCAT, Feb.

Hudgin, R.A. (1983) Using financial statements in farming. Co. Financial Mgmt. Seminars. Greely, Mar.

Johnson, P.L. (1982) The role of dietary fiber in Canadian diets. Can. Hospital Assn. Mtg. Ottawa, June.

Johnson, P.L. (1983) The role of the food supervisor - the challenge of change. Can. Food Service Supervisors' Assn. Ottawa, Mar.

Langenberg, W.J. (1982) The economizer - an energy efficient maple sap evaporator. Ontario Maple Syrup Producers' Assn. Ottawa. The North American Maple Syrup Council Mt. Bainsville, OH, Oct.

Langenberg, W.J. (1982) U.V. sterilization of maple sap. Ontario Maple Syrup Producers' Assn. Mtg. Ottawa. The North American Maple Syrup Council Mtg. Bainsville, OH, Oct.

MacDonald, D.W. (1982) Weed control in soybeans. Lanark Co. Soybean Day. Carleton Place, Apr.

MacDonald, D.W. (1982) Weed control in soybeans. TFIO Workshop. KCAT, July.

MacDonald, D.W. (1983) Weed control principles. Business of Farm Mgmt. Workshop. Carleton Place, Feb.

Madill, J.E. (1983) Industrial crops. Guest lecture. Macdonald College, Jan.

Madill, J.E. (1982) Soybean production in Eastern Ontario. Trade mtg. Victory Soys. Carleton Place, Apr.

Morrison, R.L. (1983) Overview of current farm financial situations. East. Ont. Farmers' Wk. KCAT, Feb.

Morrison, R.L. (1983) Preparing financial statements and use of financial ratios. Reg. 4-H Farm Financial Competition. KCAT, Mar.

Morrison, R.L. (1983) Present financial situation. Farm Business for Farm Women Conf. KCAT, Jan.

Pickard, M.G. (1983) Capital gains implications when selling assets. Co. Financial Mgmt. Seminars. Winchester, Feb.

Pickard, M.G. (1982) Production information available to bankers by staff of KCAT. Bankers' Forum. KCAT, Nov.

Pickard, M.G. (1983) What I should know about capital gains tax when selling assets. Farm Business for Farm Women Conf. KCAT, Jan.

Reasbeck, L.M. and P.L. Johnson (1983) The changing focus of education for food service and home economics. Dietetic representatives of Inservice Training Hospitals Ann. Mtg. KCAT, Feb.

Reasbeck, L.M. and P.L. Johnson (1982) The changing role of the food service supervisor. Can. Food Service Supervisors' Assn. Workshop. KCAT, Oct.

Wheeler, E.E. (1983) Breeding systems and principles of rabbit selection. East. Ont. Meat Rabbit Producers' Assn. KCAT, Mar.

Wheeler, E.E. (1983) Total mixed rations in the KCAT dairy herd. Grenville Co. Dairy Day. KCAT, Mar.

Wren, B.P. (1983) Agricultural careers. OIA Mtg. Lindsay, Feb.

Wren, B.P. (1983) Program evaluation. RSVP (Rural Seminars for Vital People) Workshops. Alfred, KCAT, Cornwall, Arnprior, Mar.

AUDIO VISUAL

Drevjany, L.A. (1983) Housing and management of veal calves. CTV,

Drevjany, L.A. (1983) Housing facilities for veal calves. CKWS TV.

Johnson, P.L. (1982) Sensory qualities of milk-fed veal. CBC Radio tape. Ottawa, July.

Reasbeck, L.M. (1982) Career opportunities for graduates in the food

Reasbeck, L.M. (1982) The hand that rocks the cradle. CJRT FM.

New Liskeard College of Agricultural Technology

PERIODICALS

Dupchak, K.M. (1983) "Antibiotics as an aid in maximizing lamb growth." *Highlights Agric. Res. Ont.*6(1): 1-3.

Dupchak, K.M. (1983) "Survival of newborn lambs." *OMAF Norfacts.* Jan.

Hughes, B.R. and M.J. Tusjita. (1982) "The effect of supplemental high pressure sodium lighting and nutrition on vegetative growth and flowering of 'White Marble' and 'Improved Mefo' cut chrysanthemums." *J. Amer. Hort. Sci.* 107(6): 1019-24.

Skepasts, A.V., J. Rowsell and D. Leggett. (1982) "Performance of barley varieties at New Liskeard". *OMAF Norfacts.* July.

Skepasts, A.V., J. Rowsell and D. Leggett. (1983) "Performance of barley varieties at New Liskeard in 1982." *OMAF Norfacts.* Feb.

Skepasts, A.V., J. Rowsell and D. Leggett. (1982) "Performance of oat varieties at New Liskeard." *OMAF Norfacts.* Aug.

Skepasts, A.V., J. Rowsell and D. Leggett. (1983) "Oat varieties at New Liskeard in 1982." *OMAF Norfacts.* Feb.

PROCEEDINGS

Dupchak, K.M. (1983) "Sheep research at New Liskeard." *Proc. Quinte Livestock Days - Sheep Day.* Belleville, Feb.

Dupchak, K.M. (1983) "Survival of newborn lambs." *Proc. Southwest. Ont. Farmers' Wk.* Livestock Day. RCAT, Jan. pp. 1-5.

BOOKS, THESES, REPORTS

Pollock, W.E. (1982) *Formic acid treated haylage.* OMAF news release. Aug.

PRESENTATIONS

Hughes, B.R. (1983) Mulches in the home garden. Englehart Hort. Soc. Englehart, Mar.

Hughes, B.R. (1982) Planting ornamental gardens - trees, shrubs and perennials. New Liskeard Hort. Soc. New Liskeard, May.

Pollock, W.E. (1982) Dairy goat management. Claybelt Goat Assn. Ann. Mtg. New Liskeard, Nov.

Pollock, W.E. (1983) Feeding the dairy goat. Dairy Goat Workshop. Sudbury, Mar.

Pollock, W.E. (1983) Raising replacement dairy heifers. Farm Mgmt. Workshop. Powassan, Jan.

Rowsell, J. (1983) Experiences with canola production at New Liskeard College of Agricultural Technology. Canola Growers Conf. New Liskeard, Feb.

Rowsell, J. (1983) Research in Northern Ontario - Canola, soil fertility. 17th Ann. Northeast. Ont. Agric. Conf. NLCAT, Mar.

Skepasts, A.V. (1982) Cash crops for northeastern Ontario. Cochrane South SCIA Mtg. Matheson, Dec.

Skepasts, A.V. (1982) Efficient forage production in northern Ontario. SCIA Mtg. Emo, Apr.

Skepasts, A.V. (1982) Forage establishment, maintenance and utilization. SCIA Mtg. Fort Frances, Dec.

Skepasts, A.V. (1982) Grain production in northern Ontario. Thunder Bay SCIA Mtg. Thunder Bay, Dec.

Skepasts, A.V. (1983) Research in northern Ontario - cereals and forages. 17th Annual Northeast. Ont. Agric. Conf. NLCAT, Mar.

Taylor, D.W. (1982) Computerized dairy ration formulation. Daco Dairy Day. Verner, Apr.

Taylor, D.W. (1983) Dairy cow feeding programmes. Farm Mgmt. Workshop. Powassan, Jan.

Taylor, D.W. (1982) Dairy feeding programmes. Algoma 4-H Conf. Echo Bay, July.

Taylor, D.W. (1982) Dairy feeding programmes. ODHIC Staff Update. NLCAT, May.

Taylor, D.W. (1982) Graduation day address. Kerns Public School Graduation. New Liskeard, June.

Taylor, D.W. (1982) Northern Ontario agriculture. Ont. North Now Staff Training Session. Toronto, May.

Ridgetown College of Agricultural Technology

PERIODICALS

Ablett, G.R. (1983) "An introduction to soybeans." *Cash Crop Farming.* 44(3): 36-37.

Ablett, G.R. (1982) "An introduction to soybeans." *Notes on Agriculture.* XVIII (1): 9-10.

Baldwin, C.S. (1982) "Putting the breaks on soil loss: Windbreaks and improved yield." *Highlights Agric. Res. Ont.* 5(3): 10-12.

Baldwin, C.S. (1982) "Tillage Talk." *Country Guide.* June. pp. 31-38.

Baldwin, C.S. (1982) "Windbreaks." *The Furrow Magazine.* May-June.

Bodnar, J.M. (1982) "Corn rootworm insecticide screening." (Abstr.) *Pesticide Res. Rpt. 1982.* Exp. Comm. on Pesticide Use in Agric. p. 174.

Bodnar, J.M. (1982) "Potato leafhopper screening trial in alfalfa." (Abstr.) *Pesticide Res. Rpt. 1982.* Exp. Comm. on Pesticide Use in Agric. p. 171.

Bodnar, J.M., J.T.A. Proctor, J.E. Laing and R.A. Cline (1983) "Nutrient changes in apple leaves due to spotted tentiform leafminer (*Phyllonorycter blancardella*)." *Amer. Soc. Hort. Sci.* In press.

Brown, R.H. (1983) "Control weeds affordably." *Farm and Country.* Mar.

Brown, R.H. (1983) "Cost effective weed control." *Corn in Canada.* 9(2): 12-14.

Brown, R.H. (1982) "Economic week control for field corn growers." *Cash Crop Farming.* Feb.

Brown, R.H. (1982) "Wipe-on and work applicators: Another dimension in weed control." *Highlights Agric. Res. Ont.* (5)2: 1-3.

Brown, R.H. and C.J. Swanton. (1982) "Additives with atrazine for postemergence weed control in field corn XIII." *Exp. Comm. on Weds, Res. Rpt.: East Sect.* p. 92

Brown, R.H. and C.J. Swanton. (1982) "Alachlor formulations in combinations for weed control in field corn XVI." *Exp. Comm. on Weeds, Res. Rpt.: East Sect.* p. 95.

Brown, R.H. and C.J. Swanton. (1982) "Atrazine formulations and combinations for postemergence weed control in field corn XXI." *Exp. Comm. on Weeds, Res. Rpt.: East Sect.* p. 100.

Brown, R.H. and C.J. Swanton. (1982) "Combinations of herbicides for weed control in transplanted tomatoes III." *Exp. Comm. on Weeds, Res. Rpt.: East Sect.* p. 323.

Brown, R.H. and C.J. Swanton. (1982) "Combinations of preplant incorporated herbicides for weed control in field corn VI." *Exp. Comm. on Weeds, Res. Rpt.: East. Sect.* p. 82.

Brown, R.H. and C.J. Swanton. (1982) "Cyanazine/atrazine + dicamba combinations for postemergence weed control in field corn XV" *Exp. Comm. on Weeds, Res. Rpt.: East. Sect.* p. 94.

Brown, R.H. and C.J. Swanton. (1982) "Cyanazine/atrazine formulations for weed control in field corn VII." *Exp. Comm. on Weeds, Res. Rpt.: East. Sect.* p. 83.

Brown, R.H. and C.J. Swanton. (1982) "Cyanazine formulations for preplant incorporated weed control in field corn I." *Exp. Comm. on Weeds, Res. Rpt.: East. Sect.* p. 77.

Brown, R.H. and C.J. Swanton. (1982) "Cyanazine formulations for weed control in field corn XVIII." *Exp. Comm. on Weeds, Res. Rpt.: East. Sect.* p. 97.

Brown, R.H. and C.J. Swanton. (1982) "Dicamba/atrazine combinations for weed control in field corn IV." *Exp. Comm. on Weeds, Res. Rpt.: East. Sect.* p. 80.

Brown, R.H. and C.J. Swanton. (1982) "Dicamba formulations for weed control in field corn V." *Exp. Comm. on Weeds, Res. Rpt.: East. Sect.* p. 81.

Brown, R.H. and C.J. Swanton. (1982) "Dicamba formulations with alachlor for weed control in field corn XX." *Exp. Comm. on Weeds, Res. Rpt.: East. Sect.* p. 99.

Brown, R.H. and C.J. Swanton. (1982) "Dicamba treatments for weed control in field corn III." *Exp. Comm. on Weeds, Res. Rpt.: East. Sect.* p. 79.

Brown, R.H. and C.J. Swanton. (1982) "Formulations of cyzanazine in herbicide program for pre-emergence weed control in field corn XVII." *Exp. Comm. on Weeds, Res. Rpt.: East. Sect.* p. 96.

Brown, R.H. and C.J. Swanton. (1982) "Grass control in transplanted peppers III." *Exp. Comm. on Weeds, Res. Rpt.: East. Sect.* p. 349.

Brown, R.H. and C.J. Swanton. (1983) "Herbicide combinations for optimum weed control in transplanted processing tomatoes." *Weed Sci. Soc. Amer.* Feb., p. 34.

Brown, R.H. and C.J. Swanton. (1982) "Herbicide combinations with alachlor for weed control in field corn XIX." *Exp. Comm. on Weeds, Res. Rpt.: East. Sect.* p. 98.

Brown, R.H. and C.J. Swanton. (1982) "New herbicides for weed control in field corn IX." *Exp. Comm. on Weeds, Res. Rpt.: East. Sect.* p. 88.

Brown, R.H. and C.J. Swanton. (1982) "Nutsedge control with post emergence herbicides in field corn XII 1982." *Exp. Comm. on Weeds, Res. Rpt.: East. Sect.* p. 91.

Brown, R.H. and C.J. Swanton. (1982) "Postemergence combinations for weed control in field corn VIII." *Exp. Comm. on Weeds, Res. Rpt.: East. Sect.* p. 84.

Brown, R.H. and C.J. Swanton. (1982) "Postemergence combinations for weed control in field corn XIV." *Exp. Comm. on Weeds, Res. Rpt.: East. Sect.* p. 92.

Brown, R.H. and C.J. Swanton. (1982) "Postemergence grass herbicides for weed control in transplanted tomatoes I." *Exp. Comm. on Weeds, Res. Rpt.: East. Sect.* p. 321.

Brown, R.H. and C.J. Swanton. (1982) "Postemergence herbicides with Dowco 356 for weed control in field corn XI." *Exp. Comm. on Weeds, Res. Rpt.: East. Sect.* p. 90.

Brown, R.H. and C.J. Swanton. (1982) "Postemergence herbicides for quackgrass control IV." *Exp. Comm. on Weeds, Res. Rpt.: East Sect.* p. 459.

Brown, R.H. and C.J. Swanton. (1982) "Preplant incorporated combinations for weed control in transplanted tomatoes II." *Exp. Comm. on Weeds, Res. Rpt.: East. Sect.*

Brown, R.H. and C.J. Swanton. (1982) "Preplant incorporated herbicides for nutsedge control in field corn X." Exp. Comm. on Weeds, Res. Rpt.: East. Sect. p. 89.

Brown, R.H. and C.J. Swanton. (1982) "Preplant incorporated herbicides for quackgrass control III." *Exp. Comm. on Weeds, Res. Rpt.: East Sect.* pp. 458-59.

Brown, R.H. and C.J. Swanton. (1982) "Quackgrass control in soybeans II." *Exp. Comm. on Weeds, Res. Rpt.: East. Sect.* pp. 460-61.

Brown, R.H. and C.J. Swanton. (1982) "Quackgrass control in soybeans III." *Exp. Comm. on Weeds, Res. Rpt.: East. Sect.* pp. 461-62.

Brown, R.H. and C.J. Swanton. (1982) "Sethoxydim for quackgrass control in soybeans I." *Exp. Comm. on Weeds, Res. Rpt.: East. Sect.* p. 460.

Brown, R.H. and C.J. Swanton. (1982) "Spinning disk vs. conventional nozzle application of glyphosate on quackgrass I." *Exp. Comm. on Weeds, Res. Rpt.: East. Sect.* p. 458.

Brown, R.H. and C.J. Swanton. (1982) "a) Velvet leaf control I. b) Velvetleaf control II. c) Velvet leaf control with postemergence treatments III. d) Velvet leaf control with postemergence herbicides IV. e) Velvet leaf control with new herbicides V." *Exp. Comm. on Weeds, Res. Rpt.: East. Sect.* pp. 547-51.

Brown, R.H. and C.J. Swanton. (1982) "Weed control in transplanted peppers II." *Exp. Comm. on Weeds, Res. Rpt.: East. Sect.* p. 348.

Collins, R. and C.S. Baldwin. (1982) "We must stop killing our soils." *Reader's Digest.* Aug. pp. 53-57.

Hohenadel, P. and C.K. Stevenson. (1983) "Corn yield record set." *Country Guide.* Jan., p. 35.

Johnson, R.W. and J.H. Brimner. (1982) "A reassessment of limestone use for acid soils." *Highlights Agric. Res.* 5(3): 13-16.

Liptay, A. and J.K. Muehmer. (1982) "Evaluation of baby carrots and their growing patterns in Southwestern Ontario." *Can. J. Plant Sci.* 60: 911-15.

Luckham, D.G. (1982) "Management - the key to the future." *Voice of the Kent Farmer.* Apr. 26.

Morris, J.R. (1982) "Feed intake control can raise profits." *Market Place Qtly.* Summer: 52-53.

Morris, J.R. (1982) "Most profitable pig diet." *Market Place Qtly.* Winter: 22-26.

Muehmer, J.K. (1982) "Brussels sprouts cultivar trial 1982." *Ont. Crucifer Crops Res. Comm.* p.8.

Muehmer, J.K. (1982) "Cabbage early cultivar trial 1982." *Ont. Crucifer Crops Res. Comm.* p.9.

Muehmer, J.K. (1982) "Comparison study of southern versus local transplants 1982." *Processing Tomato Res. Abstr.*

Muehmer, J.K. (1982) "Comparison study with various field seeding methods 1982." *Processing Tomato Res. Abstr.*

Muehmer, J.K. (1982) "Demonstration of advanced handpick cvs. in grower's fields 1982." *Processing Tomato Res. Abstr.*

Muehmer, J.K. (1982) "Early self-blanching type cauliflower trial 1982." *Ontario Crucifer Crops Res.Comm.* p.10.

Muehmer, J.K. (1982) "Evaluation of advanced tomato cvs. when machine harvested at Blenheim 1982." *Processing Tomato Res. Abstr.*

Muehmer, J.K. (1982) "Evaluation of entries to NTEP trials 1982." *Processing Tomato Res. Abstr.*

Muehmer, J.K. (1982) "Ontario co-ordinated tomato trials RCAT 1982." *Processing Tomato Res. Abstr.*

Muehmer, J.K. (1982) "Plant population study with FM 6203 1982." *Processing Tomato Res. Abstr.*

Muehmer, J.K. (1982) "Screening of additional tomato cvs. for use under southwestern Ontario conditions 1982." *Processing Tomato Res. Abstr.*

Muehmer, J.K. (1982) "Tomato systems test 1982." *Processing Tomato Res. Abstr.*

Pitblado, R.E. (1982) "Bacterial speck disease survey 1982." *Processing Tomato Res. Abstr.*

Pitblado, R.E. (1982) "Chemical control of cole crop insects." *Pesticide Res. Rpt. 1982.* Exp. Comm. on Pesticide Use in Agric. p.82.

Pitblado, R.E. (1982) "Corn pest gets zapped." *Farm and Country.* Apr. p. 30.

Pitblado, R.E. (1982) "Disease resistance levels in commercial field tomato cultivars." *Processing Tomato Res. Abstr.*

Pitblado, R.E. (1982) "Effect of ethrel on the incidence of tomato anthracnose." *Processing Tomato Res. Abstr.*

Pitblado, R.E. (1982) "Effect of foliar fertilizers on the control of bacteria speck - 1982." *Pesticide Res. Rpt. 1982.* Exp. Comm. on Pesticide Use in Agric. p.252.

Pitblado, R.E. (1982) "Evaluation of tomato breeding lines for resistance to fruit anthracnose - 1982." *Processing Tomato Res. Abstr.*

Pitblado, R.E. (1982) "Flea beetle control in direct-seeded cabbage." *Pesticide Res. Rpt. 1982.* Exp. Comm. on Pesticide Use in Agric. p.76.

Pitblado, R.E. (1982) "Foliar fertilizers and foliage disease control in potatoes." *Pesticide Res. Rpt. 1982.* Exp. Comm. on Pesticide Use in Agric. p.259.

Pitblado, R.E. (1982) "Granular insecticide control of potato foliar insects." *Pesticide Res. Rpt. 1982.* Exp. Comm. on Pesticide Use in Agric. p.145.

Pitblado, R.E. (1982) "Insecticide screening for the control of cole crop insects." *Pesticide Res. Rpt. 1982.* Exp. Comm. on Pesticide Use in Agric. p.81.

Pitblado, R.E. (1982) "Late season control of septoria leaf blight in tomatoes." *Pesticide Res. Rpt. 1982.* Exp. Comm. on Pesticide Use in Agric. p.253.

Pitblado, R.E. (1982) "Potato inspectors will train at RCAT." *Windsor Star.* June 2. p. 24.

Pitblado, R.E. (1983) "Ridgetown rears rootworms." *Stalk Talk.* Cyanamid Co. Ltd. 1(1): 3.

Pitblado, R.E. (1982) "Septoria and early blight disease survey - 1982." *Processing Tomato Res. Abstr.*

Pitblado, R.E. (1982) "Septoria leaf blight control in field tomatoes." *Pesticide Res. Rpt. 1982.* Exp. Comm. on Pesticide Use in Agric. p.253.

Pitblado, R.E. (1982) "Screening corn borer insecticides in peppers." *Pesticide Res. Rpt. 1982.* Exp. Comm. on Pesticide Use in Agric. p.122.

Pitblado, R.E. (1982) "Screening insecticides for the control of European corn borers in sweet corn." *Pesticide Res. Rpt. 1982.* Exp. Comm. on Pesticide Use in Agric. p.106.

Pitblado, R.E. (1982) "Screening insecticides for the control of leafhoppers in potatoes." *Pesticide Res. Rpt. 1982.* Exp. Comm. on Pesticide Use in Agric. p.145.

Pitblado, R.E. (1982) "Spray timing intervals for the control of corn borers in peppers." *Pesticide Res. Rpt. 1982.* Exp. Comm. on Pesticide Use in Agric. p.121.

Pitblado, R.E. (1982) "Spray timing intervals for the control of corn borers in sweet corn." *Pesticide Res. Rpt. 1982.* Exp. Comm. on Pesticide Use in Agric. p.105.

Pitblado, R.E. (1983) "Soybean sickness." *Country Guide.* Mar. p. 32.

Pitblado, R.E. (1982) "The effect of calcium nitrate in controlling tomato foliar disease." *Pesticide Res. Rpt. 1982.* Exp. Comm. on Pesticide Use in Agric. p.256.

Pitblado, R.E. (1982) "The effect of the additive piperonyl butoxide to the insecticidal activity of the synthetic pyrethroids ambush and cymbush." *Pesticide Res. Rpt. 1982.* Exp. Comm. on Pesticide Use in Agric. p.146.

Pitblado, R.E. (1982) "Timing of fungicides for the control of tomato diseases." *Pesticide Res. Rpt. 1982.* Exp. Comm. on Pesticide Use in Agric. p.255.

Pitblado, R.E. (1982) "Tomato fungicide screening." *Pesticide Res. Rpt. 1982.* Exp. Comm. on Pesticide Use in Agric. p.257.

Pitblado, R.E. (1983) "Vomitoxin and diseases in winter wheat." *Cash Crop Farming.* Mar. p. 42.

Pitblado, R.E. and B.H. MacNeill. (1982) "Temperature sensitivity of a gene for resistance to *pseudomonar syringe* pv. tomato." (Abstr.) *Can. J. Plant Pathol.* 4: 309-10.

Pitblado, R.E. and J.M. Bodnar. (1982) "Insect control studies in field crops." (8 Abstrs.) *Fungicide and Insecticide Trials.* RCAT.

Pitblado, R.E. and J.M. Bodnar. (1982) "Insect control studies in vegetable crops." (15 Abstrs.) *Fungicide and Insecticide Trials.* RCAT.

Pitblado, R.E. and J.M. Bodnar. (1982) "Plant disease control studies in field crops." (11 Abstrs.) *Fungicide and Insecticide Trials.* RCAT.

Pitblado, R.E. and J.M. Bodnar. (1982) "Plant disease control studies in vegetable crops." (21 Abstrs.) *Fungicide and Insecticide Trials.* RCAT.

Proctor, J.T.A., J.M. Bodnar, W.J. Blackburn and R.L. Watson (1982) "Analysis of the effects of the spotted tentiform leafminer (Phyllonorycter blancardella) on the photosynthetic characteristics of apple leaves." *Can. J. Bot.* 60(12): 2734-40.

Ross, R.W. (1982) "Advice available." *Farm and Country.* May 11. p. 36.

Ross, R.W. (1982) "Agricultural computing in Ontario." *Highlights Agric. Res. Ont.* 5(4): 1-2.

Ross, R.W. (1982) "Agricultural microcomputing survey." *Agric. Microcomputing Newsl.* 2(1): 5-6.

Ross, R.W. (1982) "Computerization of farming enterprises will accelerate." *roots.* 3(1): 8.

Ross, R.W. (1982) "First step: learn about computers." *West. Ont. Farmer.* Apr. 7. p. 49.

Ross, R.W. (1983) "Hardware summary". *Agric. Microcomputing Newsl.* 2(1): 2-3.

Ross, R.W. (1983) "Microcomputers now on stream". *Agric. Microcomputing Newsl.* 2(1): 1

Ross, R.W. (1982) "More information". *Agric. Microcomputing Newsl.* 1(2): 3.

Ross, R.W. (1982) "Visicalc - a must for your farm computer". *Agric. Microcomputing Newsl.* 1(2): 2.

Ross, R.W. (1982) "What is Agnet?" *Agric. Microcomputing Newsl.* 1(2): 6.

Ross, R.W. (1982) "Where we're going". *Agric. Microcomputing Newsl.* 1(2): 4.

Ross, R.W. (1983) "Where we're going". *Agric. Microcomputing Newsl.* 2(1): 4.

Smid, A.E. (1983) "A place for special crops." *The Furrow.*88(2): 25-26.

Smid, A.E. (1982) "Chemical control of cereal lodging." *Cash Crop Farming.* 43(8): 10-12.

Smid, A.E. (1982) "Farmers who lost winter wheat luck out." *roots.* 3(1): 15.

Smid, A.E. (1982) "Farmers who lost winter wheat luck out." *Voice of the Kent Farmer.* July 26. p. 34.

Smid, A.E. (1982) "High in oil, flax may not be suited to Southwestern Ontario." *Voice of the Kent Farmer.* Sept. 13. pp. 1-2.

Smid, A.E. (1982) "World food and world hunger." *Reformed Perspective.* 1(9): 4-7.

Stevenson, C.K. (1983) "Cut fertilizer needs safely?" *Farm and Country.* Mar. p. M1.

Stevenson, C.K. (1982-83) "New record corn yield for Canada - 251bu/ A." Better Crops With Plant Food. Winter, p. 6.

Swanton, C.J. (1982) "Cultivation complements soybean herbicides." *Beans in Canada.* 9(3): 36-38.

Swanton, C.J. (1982) "New controls for Jerusalem artichoke." *Cash Crop Farming.* 44(3): 20-23.

Swanton, C.J. (1982) "Soybean cultivation improves weed control." *Cash Crop Farming.* 44(3): 24-25.

Swanton, C.J. and A. Hamill. (1983) "Jerusalem artichoke." *OMAF Factsheet.* In press.

Swanton, C.J. and R.H. Brown. (1982) "Evaluation of herbicides for weed control in barley." (2 Abstr.) *Exp. Comm. on Weeds Res. Rpt.: East Sect.* pp. 36-37.

Swanton, C.J. and R.H. Brown. (1982) "Herbicides for control of Jerusalem artichoke (Helianthus tuberosus L.)." *Exp. Comm. on Weeds Res. Rpt.: East Sect.* p. 385.

Swanton, C.J. and R.H. Brown. (1982) "Herbicides for control of quackgrass in potatoes." *Exp. Comm. on Weeds Res. Rpt.: East Sect.* p. 310.

Swanton, C.J. and R.H. Brown. (1982) "Herbicides for control of swamp smartweed (Polygonum coccineum L.)." (2 Abstr.) *Exp. Comm. on Weeds Res. Rpt.: East Sect.* p. 487.

Swanton, C.J. and R.H. Brown. (1982) "Herbicides for weed control in cabbage and broccoli." *Exp. Comm. on Weeds Res. Rpt.: East Sect.* p. 375.

Swanton, C.J. and R.H. Brown. (1982) "Herbicides for weed control in cucumbers." *Exp. Comm. on Weeds Res. Rpt.: East Sect.* p. 344.

Swanton, C.J. and R.H. Brown. (1982) "Herbicides for weed control in eggplants." *Exp. Comm. on Weeds Res. Rpt.: East Sect.* p. 385.

Swanton, C.J. and R.H. Brown. (1982) "Herbicides for weed control in lima beans." *Exp. Comm. on Weeds Res. Rpt.: East Sect.* p. 251.

Swanton, C.J. and R.H. Brown. (1982) "Herbicides for weed control in potatoes." (3 Abstr.) *Exp. Comm. on Weeds Res. Rpt.: East Sect.* pp. 299-301.

Swanton, C.J. and R.H. Brown. (1982) "Herbicides for weed control in soybeans." (6 Abstr.) *Exp. Comm. on Weeds Res. Rpt.: East Sect.* pp. 214-219.

Swanton, C.J. and R.H. Brown. (1982) "Herbicides for weed control in summer squash." *Exp. Comm. on Weeds Res. Rpt.: East Sect.* p. 345.

Swanton, C.J. and R.H. Brown. (1982) "Herbicides for weed control in white kidney beans." (2 Abstr.) *Exp. Comm. on Weeds Res. Rpt.: East Sect.* pp. 241-242.

Swanton, C.J. and R.H. Brown. (1982) "Postemergence herbicides for control of Jimsonweed." *Exp. Comm. on Weeds Res. Rpt.: East Sect.* p. 558.

Swanton, C.J. and R.H. Brown. (1982) "Tank mixtures and sequential treatments with sethoxydim in red clover." *Exp. Comm. on Weeds Res. Rpt.: East Sect.* p. 63.

PROCEEDINGS

Ablett, G.R. (1983) "Variety and production update." *Southwest. Ont. Farmers' Wk.* Corn and Soybean Day. RCAT, Jan. pp. Al-2.

Baldwin, C.S. (1983) "Acid rain update." *Proc. RCAT Farmers' Wk.* RCAT, Jan.

Baldwin, C.S. (1982) "Keeping our soils productive." *Proc. East. Ont. Farmers' Wk.* Kemptville, Feb.

Baldwin, C.S. (1982) "The growth and yield of corn and soybeans as influenced by windbreak protection." *Proc. 37th Ann. Mtg. J. Soil Water Conserv.* New Orleans, LA, Aug. p. 3.

Brown, R.H. (1983) "Cost effective weed control in field corn." *Proc. Southwest. Ont. Farmers' Wk.* Corn and Soybeans. RCAT. pp. K1-K3.

Brown, R.H. (1983) "Weed control in processing tomatoes." *Proc. Southwest. Ont. Farmers' Wk.* Tobacco. pp. H-8-1-4.

Jung, R., E. Tomecek and J.K. Muehmer. (1982) "Experience with fluid drilling pre-germinated tomato seed in Ont. *Proc. Mtg. Amer. Soc. of Agric. Engng.* Chicago, IL, Dec.

Morris, J.R. (1983) "Amino acid balancing for more economical swine feeds." *Proc. Southwest. Ont. Pork Producers' Conf.* Feb.

Muehmer, J.K. (1982) "Breeding peppers for Canada's special requirements." *Proc. 6th Ntl. Pepper Conf.* San Miguel Allende, Mexico, June.

Muehmer, J.K. (1982) "Plant populations and planting patterns." *Proc. Southwest. Ont. Farmers' Wk.* RCAT. pp. E5-E6.

Muehmer, J.K. and J. Brimmer. (1982) "A simplified method of pregerminating pepper seeds in bulk." *Proc. 6th Ntl. Pepper Conf.* San Miguel Allende, Mexico, June.

Murray, D.A. (1982) "RCAT beef cattle research update." *Proc. RCAT Farmers' Wk.* Livestock Day. RCAT, Jan.

Murray, D.A. (1982) "Research update from RCAT." *Proc. Simcoe Co. Farmers' Wk.* Barrie, Jan.

Pitblado, R.E. (1983) "Combatting vomitoxin and disease in wheat." *Southwest. Ont. Farmers' Week.* RCAT, Jan. pp. C1-C4.

Pitblado, R.E. (1983) "Disease control and application techniques." *Southwest. Ont. Farmers' Week.* RCAT, Jan. pp. C3-C4.

Pitblado, R.E. (1983) "Diseases and insects in soybeans and corn." *Southwest. Ont. Farmers' Week.* Jan. pp. C1-C3.

Pitblado, R.E. (1983) "The use of copper in processing tomatoes in Ontario." *Proc. Copper in Agric.* p. 8.

Pitblado, R.E. (1983) "What bugs you about pests." *Proc. 3rd Ann. Mtg. Farrowing School for Women.* RCAT, Jan. p. 7.

Ross, R.W. (1983) "(When) do I need a computer?" *Proc. RCAT Microcomputer Seminar and Show.* RCAT, Mar. pp. 1-4.

Smid, A.E. (1983) "New varieties and new cereal production methods." *Southwest. Ont. Farmers' Wk.* Cereals and Edible Bean Day. RCAT, Jan. pp. A1-4.

Stevenson, C.K. (1983) "Fertilizing corn and soybeans." *Proc. Southwest. Ont. Farmers' Wk.* RCAT. Jan.

Swanton, C.J. (1983) "Cultivation - an important tool in weed control management." *Proc. Southwest. Ont. Farmers' Wk.* Corn and Soybean Day. RCAT. pp. B1-B3.

Swanton, C.J. (1983) "Nightshade control in coloured beans." *Proc. Southwest. Ont. Farmers' Wk.* Cereals and Edible Bean Day. RCAT pp. H1-H3.

BOOKS, THESES, REPORTS

Ablett, G.R. (1983) *Preliminary Test I, Uniform Tests I and II, Uniform Soybean Tests Northern States 1982.* Purdue Univ., West Lafayette, ID, Jan.

Ablett, G.R. (1983) *Ridgetown report to the Ontario Field Bean Research Committee.* Ont. Field Bean Res. Comm. RCAT, Nov.

Ablett, G.R. (1983) *Ridgetown report to the Ontario Oil and Protein Seed Crop Committee.* Ont. Oil and Protein Seed Crop Comm. Toronto, Jan.

Allen, W.R. (1983) *Canada/Australia agricultural teaching exchange.* RCAT.

Allen, W.R. (1982) *Pea harvester study.* Ont. Veg. Growers' Mktg. Bd.

Baldwin, C.S. (1982) *Ontario research and extension priorities.* Rpt. to Exp. Comm., Soil Mgmt. Saskatoon, Sask., Nov.

Johnston, R.W. (1982) *Annual Report of the Environmental Quality Subcommittee to the OSMRC.* July.

Johnston, R.W. (1982) *Do micronutrients fit into your cropping program.* Leader Publ. Apr.

Johnston, R.W. (1982) *Report of limestone research to the Fertilizer and Limestone Subcommittee of the OSMRC.* June.

Johnston, R.W. (1982) *Report of micronutrient research on soybeans to the Fertilizer and Limestone Subcommittee of the OSMRC.*

Johnston, R.W. (1982) *Soil pH and liming.* Asparagus growers update mtg. Delhi, Mar.

McLaren, A.D. (1982) *1983 report Ontario hybrid corn performance trials.* Ont. Corn Comm. RCAT, Dec.

McLaren, A.D. (1983) *Ontario forage crop investigations, 1982 report on field trials of varieties and mixtures.* Ont. Forage Crop Comm. OAC, Mar.

Morris, J.R. (1982) *Changing times, changing ways for pork producers.* OMAF news release. June.

Ross, R.W., J.E. Cardiff and J. Clark. (1983) *Dairy programs available to Ontario farmers.* OMMB On-Farm Computer Comm. Toronto, Jan.

Smid, A.E. (1983) *Annual report on cooperative winter wheat variety tests in Ontario, 1982.* Univ. of Guelph, Jan.

Smid, A.E. (1983) *Barley winter hardiness nursery.* USDA Penn. State Univ. University Park, PA, Aug.

Smid, A.E. (1983) *Progress report cooperative winter barley tests 1982.* OAC. Univ. of Guelph, Jan.

Smid, A.E. (1983) *Progress reports on eastern screening and cooperative barley and oat tests.* Agric. Can. Ottawa Res. Stn. Rpts. 143, 144, 145, 146.

Smid, A.E. (1983) *Uniform winter barley nursery of hardy varieties.* USDA, Beltsville, MD, Dec.

Sojak, M. and J.R. Morris (1982) *Automation of CPS Centre Air Inlet.* Can. Soc. Agric. Engng. Vancouver, B.C., July. Paper No. 82-205.

Stevenson, C.K. (1982) *1982 Report of the OSMRC to the OSWARC.* Toronto, Nov.

PRESENTATIONS

Ablett, G.R. (1982) Coloured beans — state of the art. Alternative Crops Workshop. RCAT, Dec.

Ablett, G.R. (1983) Future harvesting techniques white bean yield and quality seminar. Exeter, Mar.

Ablett, G.R. (1982) Peanuts — state of the art. Alternative Crops Workshop. RCAT, Dec.

Ablett, G.R. (1983) Seed quality in soybeans. Plant Breeders Technicians Workshop. Univ. of Guelph, Mar.

Ablett, G.R. (1982) Soybean and white bean production. Elevator and Farm Supply Industry Program. RCAT, July.

Ablett, G.R. (1983) Soybean varieties and management. Essex SCIA Crops Update. Comber, Harrow, Mar.

Ablett, G.R. (1983) Soybean varieties and production. Crop Update, Lambton Co. Becher, Jan.

Ablett, G.R. (1983) Soybean varieties and production practices. Small Grains and Forage Congress. Alexander, NY, Mar.

Ablett, G.R. (1983) Soybean varieties and production practices. Small Grains and Forage Congress. Geneva, NY, Mar.

Ablett, G.R. (1983) Soybean varieties and production techniques. Mgmt. of the Farm Business. Wyoming, Feb.

Baldwin, C.S. (1982) A concern for our countryside. OIA S.W. Br. Tilbury, Oct.

Baldwin, C.S. (1982) A History of Concern — Introduction. Diffuse Update — Thames River Implementation Comm. London, April.

Baldwin, C.S. (1982) Acid rain — position statement. Ont. —US SCSA. Syracuse, NY, Nov.

Baldwin, C.S. (1982) Acid rain — The North American dilemma. Ont. — US SCSA Symposia. Burlington, VT, Oct.

Baldwin, C.S. (1983) Benefits of farm windbreaks. Windbreak Seminar, Kent Co. Chatham, Mar.

Baldwin, C.S. (1982) Conservation in Ontario. Ann. Mtg. Essex Co. SCIA. Essex, Dec.

Baldwin, C.S. (1982) Copper in agriculture. OMAF Symposia. Univ. of Guelph, Mar.

Baldwin, C.S. (1983) Drop inlet structure — gully. Conservation Measures Short Course. RCAT, Feb.

Baldwin, C.S. (1982) Mt. St. Helens and its devastation. Victoria Avenue Couple's Club. Chatham, May.

Baldwin, C.S. (1982) OMAF and soil conservation in Ontario. Bienn. Conf. of Conservation Authorities in Ontario. Toronto, Sept.

Baldwin, C.S. (1982) Ontario Soil, Water and Air Research Committee Presentation. Ann. Mtg. OSWARC. Toronto, Nov.

Baldwin, C.S. (1982) Ontario update. Non Point Control Task Force, IJC Water Qual Bd. Windsor, Sept.

Baldwin, C.S. (1982) Presentation of *OSWARC Ann Report*. Ann. Mtg. OASCC. Toronto, Jan.

Baldwin, C.S. (1983) Research with composted sewage sludge at RCAT. Waste Utilization Comm. Mtg. Univ. of Guelph, Mar.

Baldwin, C.S. (1982) Semi-ann. Mtg. Ont. Chapt. SCSA. Tillsonburg, Sept.

Baldwin, C.S. (1982) Soil and crops update. Non Point Control Task Force. IJC Water Qual. Bd. Oct.

Baldwin, C.S. (1982) Soil and water conservation in Ontario. Ann. Mtg. Simcoe Co. SCIA. Elmvale, Sept.

Baldwin, C.S. (1982) Soil and water conservation need in Ontario. Land Resource Sci., OAC. Univ. of Guelph, Nov.

Baldwin, C.S. (1982) Soil conservation — a concern for all. Kent Co. 4H Club. Chatham, Aug.

Baldwin, C.S. (1982) Soil conservation workshop. Can. Fed. of Agric. Ottawa, Dec.

Baldwin, C.S. (1983) Soil management for long term production. Ann. Mtg. UCO. Sheffield, Wellandport, Mar.

Baldwin, C.S. (1983) Soil management in Ontario. Bruce Co. SCIA. Teeswater, Feb.

Baldwin, C.S. (1982) Soils for years to come. Rural-Urban Rotary Mtg. Chatham, Mar.

Baldwin, C.S. (1982) Some soil conservation concerns. Plant Ind. Br. Update. RCAT, July.

Baldwin, C.S. (1983) The natural fertility of soils. Fert. Short Course. RCAT, Feb.

Baldwin, C.S. (1982) The Pacific Northwest and Mt. St. Helens. 4H Club Ann. Mtg. Thorndale, Nov.

Baldwin, C.S. (1982) The prairie provinces. Kent Co. 4H Clubs. Chatham, May.

Baldwin, C.S. (1983) Tillage for top production. OSCIA Lambton Co. Wilkesport, Jan.

Baldwin, C.S. (1983) Windbreaks and woodlots in agriculture. S.W. Reg. OMNR Tree Commissioners Mtg. London, Mar.

Baldwin, C.S. (1983) Windbreaks don't cost — they pay. Windbreak and Woodlot Seminar, Lambton Co. Wyoming, Mar.

Bodnar, J.M. (1982) Insect pests on ornamental plants. District II Ont. Hort. Assn. Ann. Mtg. Ridgetown, Oct.

Bodnar, J.M. (1983) Insect pests on ornamental plants. Ridgetown Hort. Soc. Mtg. Ridgetown, Mar.

Bodnar, J.M. (1983) Insect pests on ornamental plants. Thamesville Hort. Soc. Ann. Mtg. Thamesville, Feb.

Bodnar, J.M. (1983) Pruning ornamental plants. University Women's Club Mtg. Chatham, Apr.

Bodnar, J.M. (1983) White mold on white beans. Southwest. Ont. Farmers' Wk. Ridgetown, Jan.

Bodnar, J.M. (1983) Pesticide safety. Grower Mtg. Stoney Pointe, Apr.

Brown, R.H. (1983) Calibrating the sprayer. Cyanamid. Alvinston, Apr.

Brown, R.H. (1983) Economical weed control. UCO. Wellandport, Mar.

Brown, R.H. (1982) Establishment and maintenance of lawns. COMSOC. Woodstock, Dec.

Brown, R.H. (1982) Establishment and management of lawns. Men's Club. Chatham, Apr.

Brown, R.H. (1983) Managing your herbicide dollars. UCO. Sheffield, Mar.

Brown, R.H. (1983) Maturation and weed control. Bus. of Farm. Sem. Wyoming.

Brown, R.H. (1983) Minimizing weed management costs. SCIA. Teeswater, Jan.

Brown, R.H. (1983) New concepts in weed control. SCIA. Trenton, Mar.

Brown, R.H. (1983) a) Physiology of the tomato plant. b) Canada's role in the processing industry. c) Weed control in processing tomatoes. Proc. Tomato Seminar. Leamington, Jan.

Brown, R.H. (1983) Problem weeds in corn and beans. UCO. Middlesex, Mar.

Brown, R.H. (1983) Profitability of growing corn. PAG. Grand Pointe, Apr.

Brown, R.H. (1983) Weed control in corn and beans. SCIA Dunnville, Apr.

Brown, R.H. (1983) Weed control in field corn. UCO. Exeter, Mar.

Brown, R.H. (1982) Weed control in ornamentals. RCAT, Nov.

Brown, R.H. (1983) Weed control in processing tomatoes. Tomato Sem. RCAT, Mar.

Brown, R.H. (1983) Weed control in seed corn. Pickseed Seed Grower's, Tilbury, Mar.

Brown, R.H. (1983) Weed control in veg. crops. Sci. of Weed Control. Univ. of Guelph, Mar.

Brown, R.H. (1983) Weed control strategies in field crops. Forest, Apr.

Brown, R.H. (1983) Weed identification and control. UCO. Vienna, Mar.

Brown, R.H. (1983) Weed idenfication and control in processing tomatoes. Tomato Sem. Chatham, Jan.

Ivarson, K.C. and M. Sojak (1983) Plugging of soil drains by microorganisms. Can. Soc. Soil Scientists.

Johnston, R.W. (1983) Micronutrients in crop production. Soils Short Course. RCAT, Feb.

Johnston, R.W. (1983) Practical soil management. UCO Update Mtg. Mar.

Johnston, R.W. (1983) Soil from start to finish. Farm Mgmt. Courses. Dover Ctr., Leamington, Port Stanley, Wyoming, Jan-Feb.

Johnston, R.W. (1983) Soil management and conservation. Blenheim 4H Field Crop Club. May.

Johnston, R.W. (1983) Soil pH and magnesium. Soils Short Course. RCAT, Feb.

McLaren, A.D. (1982) Corn production and management. Elevator and Farm Supply Industry Program. RCAT, July.

McLaren, A.D. (1982) Forage seed production in Ontario — state of the art. Alternative Crops Workshop. RCAT, Dec.

McLaren, A.D. (1982) New crop research. Kent Co. Sci. Teachers Seminar. RCAT, Feb.

McLaren, A.D. (1982) Research on Ontario's grain corn. Spanish Corn Buyers Seminar. RCAT, Oct.

Morris, J.R. (1982) Canola meal for livestock. Ont. Soybean Growers' Mktg. Bd. June.

Morris, J.R. (1983) Feeding pigs more profitably. Profitable Pork Prod. Course. Feb.

Morris, J.R. (1983) Floor vs. feeder feeding. Second Swine Research Update. CCAT, Jan.

Muehmer, J.K. (1982) Breeding peppers for Canada's special requirements. 6th Ntl. Pepper Conf. San Miguel Allende, Mexico, June.

Muehmer, J.K. (1983) Herbs in the home garden. Hort. Soc. Blenheim, Feb.

Muehmer, J.K. (1983) Plant populations and planting patterns. Southwest Ont. Farmers' Wk. RCAT, Jan.

Muehmer, J.K. (1983) Vegetable gardening. Hort. Soc. West Lorne, Apr.

Muehmer, J.K. (1983) Why greenhouse tomatoes are hard to set. Essex Co. Assn. Growers Ann. Conf. Leamington, Jan.

Muehmer, J.K. and J. Brimmer. (1982) A simplified method of pregerminating pepper seeds in bulk. 6th Ntl. Pepper Conf. San Miguel Allende, Mexico, June.

Murray, D.A. (1983) Improving reproductive performance of beef cattle. Temiskaming Beef Producers' Beef Day. New Liskeard, Mar.

Murray, D.A. (1982) Protein levels for feedlot cattle. Southwest. Ont. Beef Day. RCAT, Aug.

Murray, D.A. (1983) Research results from RCAT. Huron Co. Beef Producers' Anim. Info. Mtg. Clinton, Feb.

Murray, D.A. (1982) Some thoughts and ideas for feeding Simmental cattle. Simmental Assn. Summer Update. July.

Nuttall, M.A. (1983) Comparing costs of fertilizer. Materials and Mixtures, RCAT Short Course. Feb.

Nuttall, M.A. (1983) Maximum yield research. Ball Farm Services Crops Day. Aylmer, Apr.

Nuttall, M.A. (1983) The benefits of crop rotation and red clover. Topnotch Feeds Crops Day. Dorchester, Mar.

Pitblado, R.E. (1982) Aphids — Vectors for virus in seed potatoes. CDA Potato School. RCAT, June.

Pitblado, R.E. (1983) Bacterial speck research program — RCAT. OAC Agric. Conf. Pest. Symp. Jan.

Pitblado, R.E. (1983) Combatting vomitoxin and diseases in wheat. Southwest. Ont. Farmers' Wk. RCAT, Jan.

Pitblado, R.E. (1982) Control of pests on ornamental trees and shrubs. Oxford Groundskeeper's Sem. Woodstock, Nov.

Pitblado, R.E. (1983) Cultural practices for quality and yield. Processing Tomato and Equip. Day. RCAT, Mar.

Pitblado, R.E. (1983) Cutworms and potatoes. Ont. Hort. Crops Conf. Toronto, Feb.

Pitblado, R.E. (1983) Disease control and application techniques. Southwest. Ont. Farmers' Wk. RCAT, Jan.

Pitblado, R.E. (1983) Diseases and insects in soybeans and corn. Southwest. Ont. Farmers' Wk. RCAT, Jan.

Pitblado, R.E. (1982) Diseases and their control. Elevator and Farm Supply Ind. Program. RCAT, July.

Pitblado, R.E. (1983) Effects of vomitoxin to wheat producers. Lambton Wheat Prod. Mktg. Bd. Wyoming, Feb.

Pitblado, R.E. (1983) Fungicides in production. Sem. on Copper in Agric. Univ. of Guelph, Mar.

Pitblado, R.E. (1982) Genetics of resistance. NSERC Prog. Rpt. Session. Univ. of Guelph, Dec.

Pitblado, R.E. (1983) How, when, why — tomato spraying. Ohio Tomato School. Oles Zim, OH, Jan.

Pitblado, R.E. (1982) Insect and disease control. Select Soybean Seed Growers' Field Day. RCAT, Sept.

Pitblado, R.E. (1983) Insect and disease control in field crops. Manpower Farm Bus. and Mgmt. Sem. Port Stanley, Feb.

Pitblado, R.E. (1983) Insect and disease control in tomatoes. Manpower Tomato Mgmt. Sem. Leamington, Feb.

Pitblado, R.E. (1982) Insects and diseases of ornamental trees. Hort. Maint. Spray Operator's Short Course. RCAT, Nov.

Pitblado, R.E. (1982) Insects and their control. Elevator and Farm Supply Ind. Program. RCAT, June.

Pitblado, R.E. (1983) Managing tomato pests. Manpower Tomato Mgmt. Sem. Chatham, Feb.

Pitblado, R.E. (1983) Pest and diseases in corn and soybeans. Elgin Crops Update. St. Thomas, Feb.

Pitblado, R.E. (1982) Review of major insect pests and diseases of Ontario crops. Pfizer Agric. Div. Ann. Tech. Mtg. Chatham, Sept.

Pitblado, R.E. (1982) Septoria blight in tomatoes: on the increase. 5th Ont. Crop Prot. Conf. Univ. of Guelph, Nov.

Pitblado, R.E. (1983) Temperature sensitivity of a gene for resistance to Pseudomonas syringae pv. tomato. Can. Phytopath. Soc. Mtg. Univ. of Alta., Edmonton, Alta., June.

Pitblado, R.E. (1983) Tomato spraying. Leipsic Agric. Supply Co. Inc. Leipsic, OH, Mar.

Pitblado, R.E. (1983) Vomitoxin problem in winter wheat. Elgin Crops Update. St. Thomas, Feb.

Pitblado, R.E. (1983) What bugs you about pests. Farrowing School for Women. RCAT, Feb.

Ross, R.W. (1983) A computer on your tobacco farm. Can. Manpower Update Mtg. Burford, Mar.

Ross, R.W. (1983) How can egg producers use an on-farm computer? Ont. Egg. Prod. Mktg. Bd. Seaforth, Jan.

Ross, R.W. (1983) How can you use your farm computer? Waterloo Jr. Farmers' Computer Show. Univ. of Waterloo, Jan.

Ross, R.W. (1983) Microcomputers on the farm. Essex Co. Computer Show. Essex, Dec.

Ross, R.W. (1983) When should you buy an on-farm computer? Fanshawe Computer Sem.

Smid, A.E. (1982) Cereal production and management. Elevator and Farm Supply Ind. Prog. RCAT, July.

Smid, A.E. (1982) Cereal production research at RCAT. Ont. Cereal Crop Production Subcomm. Ann. Mtg. Toronto, Nov.

Smid, A.E. (1982) Field crop production planning. OMAF Program Planning and Review. RCAT, Sept.

Smid, A.E. (1983) Judging small and coarse grain cereal exhibits. Judging Field Crops Exhibits Sem. RCAT, Feb.

Smid, A.E. (1982) Malting barley — state of the art. Alternative Crops Workshop. RCAT, Dec.

Smid, A.E. (1982) Performance of recommended cereal cultivars. Ont. Cereal Crop Variety Subcomm. Ann. Mtg. Toronto, Nov.

Smid, A.E. (1983) Relative performance of cereal cultivars and selections at RCAT. Ont. Cereal Crop Variety Subcomm. Ann. Mtg. Toronto, Jan.

Smid, A.E. (1982) Triticale — state of the art. Alternative Crops Workshop. RCAT, Dec.

Smid, A.E. (1983) Winter wheat variety, production and vomitoxin. Essex SCIA Crops Update. Comber, Harrow, Mar.

Sojak, M. (1982) Onion storages. Onion Storage Workshop. Erieau, June.

Stevenson, C.K. (1983) Fertilizer research results. Fert. Short Course. RCAT, Feb.

Stevenson, C.K. (1983) Fertilizing soybeans. Stoney Point Co-op Mtg. Stoney Point, Mar.

Stevenson, C.K. (1983) Managing clay soils for top crop production. Lambton SCIA. Wilkesport, Jan.

Stevenson, C.K. (1983) Maximizing crop yields. Thorndale Farm Supplies Mtg. Thorndale, Mar.

Stevenson, C.K. (1983) Maximum economic yields. Elgin Co-op Mtg. Wallacetown, Mar.

Stevenson, C.K. (1983) Maximum yield research. Kent Co. Fertilizers Ltd. Chatham, Ridgetown and Blenheim, Feb.

Stevenson, C.K. (1983) Maximum yield research. TFIO Workshops. Chatham, Cambrige and Ottawa, Feb.

Stevenson, C.K. (1983) Maximum yields for corn and soybeans. Belgrave and Auburn Co-op mtg. Blyth, Mar.

Stevenson, C.K. (1983) Maximum yields on corn and soybeans. W.G. Thompson & Son Ltd. Mtg. Blyth, Mar.

Stevenson, C.K. (1983) Nitrogen application on corn. Haldimand SCIA. Dunnville, Apr.

Stevenson, C.K. (1983) Nitrogen fertilizer materials for crops. Elliott Bros. Grain and Feed. Shetland, Mar.

Stevenson, C.K. (1983) Soil management. Can. Manpower Course. Wyoming, Feb.

Stevenson, C.K. (1983) Soil management. OBPMB. Mitchell, Exeter and Delaware, Mar.

Swanton, C.J. (1983) Jerusalem artichoke — crop or weed? United Church Men's Group. RCAT, Jan.

Swanton, C.J. (1983) Perennial weed control in soybeans. Ilderton, Feb.

Swanton, C.J. (1982) Shedding light on Annual Nightshade. Ont. Seed Growers' Assn. RCAT, Sept.

Swanton, C.J. (1983) Weed control in soybeans. Dupont Sales Mtg. Chatham, Jan.

Swanton, C.J. (1983) Weed control in soybeans. Soils and Crops Br. Ilderton, Jan.

Underwood, J.A. (1983) Burley barn construction. Southwest. Ont. Farmers' Wk. RCAT, Jan.

Underwood, J.A. (1983) Farmstead planning and snow control. Contractors Sch. Charlottetown, P.E.I., Mar.

Underwood, J.A. (1983) Forage storage. Southwest. Ont. Farmers' Wk. RCAT, Jan.

Underwood, J.A. (1983) Future thrusts of farm building construction. Contractors Sch. Burlington, Feb.

Underwood, J.A. (1983) Grain drying systems. Southwest. Ont. Farmers' Wk. NLCAT, Mar.

Underwood, J.A. (1983) Snow and wind control around farm buildings. Ann. Can. Farm Builders' Assn. Toronto, Feb.

PRESENTATIONS

Baldwin, C.S., J. Arnold and T.H. Lane. (1983) Soil Today — Food Tomorrow. OMAF Film. Apr.

Johnston, R.W. (1982) Farmers' Week, 1983. OMAF radio tape. Nov.

Johnston, R.W. (1982) Micronutrients — should farmers use them? OMAF radio tape. May.

Johnston, R.W. (1982) What's happening in Farmers' Week 1983. CFCO Radio. Chatham, Dec.

McLaren, A.D. (1982) Modern corn production. CBC-TV. Windsor, Oct.

McLaren, A.D. (1982) RCAT twilight tours. CFCO Radio. Chatham, July.

Pitblado, R.E. (1982) Rearing European corn borers at RCAT. CBE Radio. Windsor, July.

Ross, R.W. (1983) Directory of farmer-computer owners a big hit. OMAF radio tape. Jan.

Smid, A.E. (1982) New cereal varieties for Ontario. CBE Radio Windsor, Jan.

Smid, A.E. (1983) New wheat varieties for Ontario. CBE Radio. Windsor, Mar.

University of Guelph

Beef

PERIODICALS

Bray, T.M. and J.C. Merrill. (1982) "Effect of tissue glutathione concentration and glutathione- s-transferase activity on the pulmonary toxicity of 3-methylin- dole." (Abstr.) *J. Nutr.* 112: XXV.

Buchanan-Smith, J.G. (1982) "Preservation and feeding value for yearling steers of whole plant corn ensiled at 28 and 42% dry matter with and without cold flow ammonia treatment." *Can. J. Anim. Sci.* 62: 173-80.

Buchanan-Smith, J.G. (1982) "Three years' trials with corn silage." *Breeder and Feeder.* July, p. 20.

Buchanan-Smith, J.G. , G.K. Macleod and J.C. Jofriet. (1982) "Wet cage layer excreta added to whole plant corn prior to ensiling and effect on food intake and utilization by sheep." *Can. J. Anim. Sci.* 62: 295-98.

Jones, S.D.M. (1982) "Performance and carcass characteristics of cull dairy cows given testosterone-estradiol implants." *Can. J. Anim. Sci.* 62: 295-98.

Jones, S.D.M. (1982) "The accumulation and distribution of fat in ewe and ram lambs." *Can. J. Anim. Sci.* 62: 381-86.

Jones, S.D.M. and C.R. Haworth. (1982) "The measurement of subcutaneous fat thickness in cold beef carcasses with an automatic probe." *Can. J. Anim. Sci.* 62: 645-48.

Jones, S.D.M., J.S. Walton, J.W. Wilton and J.E. Szkotnicki. (1982) "The use of urea dilution and ultrasonic backfat thickness to predict the carcass composition of live lambs and cattle." *Can. J. Anim. Sci.* 52: 371-88.

Macleod, G.K. and D.N. Mowat. (1982) "Effect of salinomycin on performance of feedlot cattle." *Beef Ind. Res. Rpt.* Univ. of Guelph, Mar.

Merrill, J.C. and T.M. Bray. (1982) "The effect of protein quantity on the activity of UDP- glucuronyl-transferase and its physiological significance in drug metabolism." *Can. J. Physiol. Pharmacol.* 60: 1556-61.

Mowat, D.N. and R. Macartney. (1982) "Growing your own calves." *Breeder and Feeder.* Apr.

Mowat, D.N. and W.K. Bilanski, and B. Wilton. (1982) "Whole crop fractionation." *Beef Ind. Res. Rpt.* Univ. of Guelph, Mar.

PROCEEDINGS

Bray, T.M. and F.E. Burley. (1982) "Effect of retinoids on the mixed function oxidase (MFO) system and on the susceptibility of goats to 3-methlindole induced lung disease." (Abstr.) *Amer. and Can. Soc. Anim. Sci. Ann. Mtg.* Univ. of Guelph, Aug. p. 323.

Bray, T.M. and J.C. Merrill. (1982) "The effect of sulfur compounds on the susceptibility to 3-methylindole-induced lung disease." (Abstr.) *Proc. Can. Fed. Biol. Sci.* 25: 101.

Kubow, S. and T.M. Bray. (1982) "ESR Spin-Trapping of free radical formation during in vitro metabolism of 3-methylindole." (Abstr.) *Fed. Proc.* 41: 775.

Ndlovu, L.R., J.G. Buchanan-Smith and P. Colucci. (1982) "Mordanting fibre with chromium to measure rate of passage from the reticulorumen." (Abstr.) *Amer. and Can. Soc. Anim. Sci. Ann. Mtg.* Univ. of Guelph, Aug. p. 446.

BOOKS, THESES, REPORTS

Merrill, J.C. (1982) *The effect of dietary protein and sulfur compounds on the phase 2 reactions in the metabolism of chloral hydrate and 3-methylindole.* M.Sc. Thesis. Univ. of Guelph, June.

PRESENTATIONS

Mowat, D.N. (1982) A systems approach to the utilization of crop residues. Amer. and Can. Soc. Ann. Mtg. Univ. of Guelph, Aug.

Rompala, R.E. and S.D.M. Jones. (1982) Growth of carcass and offal components in cattle with respect to dietary intake and genetic background. " Amer. and Can. Soc. Anim. Sci. Ann. Mtg. Univ. of Guelph, Aug.

Dairy

PERIODICALS

Burnside, E.B., R.A. Cady and P. Clelland. (1982) "Solving the stillbirth problem." *Dairy Contact.* Dec./Jan. p. 6.

Cady, R.A. and E.B. Burnside. (1982) "Evaluation of dairy bulls in Ontario for the calving ease of their offspring." *J. Dairy Sci.* 65: 2150-56.

Cady, R.A., E.B. Burnside, L. Small and M.G. Freeman. (1982) "Calving difficulty — can we avoid the problem?" *Guelph Dairy Specialist.*

Cady, R.A., E.B. Burnside, L. Small and M.G. Freeman. (1982) "Calving ease proofs for Holstein bulls used in Ontario is now a reality." *Guelph Dairy Specialist.*

Grieve, D.G. (1982) "Guelph dairy specialist discusses bypass protein in dairy cow rations." *Holstein Friesian J.* 45(4):102.

Grieve, D.G. and E.E. Wheeler. (1982) "The effect of plant population of corn for whole plant silage to be fed as roughage to lactating dairy cows." *Dairy Ind. Res. Rpt.* 82-02-18. June.

Grieve, D.G. and R.J. Forster. (1982) "Effect of ration protein degradability on lactation response." *Dairy Ind. Res. Rpt.* 82-02-09. Aug.

Grieve, D.G. and R.J. Forster. (1982) "Guelph dairy specialist discusses dairy cow responses to bypass protein." *Holstein Friesian. J.* 45(5): 94.

Grieve, D.G., D.J. Barney and G.K. Macleod. (1982) "Change in protein requirements of dairy cows throughout lactation." *Dairy Ind. Res. Rpt.* 82-02-08. Aug.

Grieve, D.G., J.G. Burton, H.E. Braun and R. Frank. (1982) "Voluntary intake of shredded newsprint by dairy cattle." *Can. J. Anim. Sci.* 62: 799-806.

Macleod, G.K. (1982) "Contribution of forages to performance of dairy cows. I. Forage: concentrate ratios for 2 year old cows." *Dairy Ind. Res. Rpt.*

Macleod, G.K. (1982) "Forage: concentrate ratios for young dairy cows." *Highlights Agric. Res. Ont.* 5:20-22.

Macleod, G.K. (1982) "Meeting protein and energy requirements of young dairy cows." *Dairy Ind. Res. Rpt.*

Macleod, G.K., T.E. Droppo and D.G. Grieve. (1982) "Feeding value of moist corn gluten feed for dairy cows." *Dairy Ind. Res. Rpt.*

Macleod, G.K., Z. Mir, J.D. Buchanan-Smith, D.G. Grieve and W.L. Grovum. (1982) "Feeding protected soybean meal to dairy cows and calves." *Dairy Ind. Res. Rpt.*

McClelland, L.A. and E.B. Burnside. (1982) "Sire selection for total milking time." *IFEP.* July.

Mills, B.L. and F.R. van de Voort. (1982) "Evaluation of CH stretch measure for estimation of fat in aqueous fat emulsions using infrared spectroscopy." *J. Assn. Off. Anal. Chem.* 65(6): 1357-61.

Mir, Z., G.K. Macleod, J.G. Buchanan-Smith, D.G. Grieve and W.L. Grovum. (1982) "Protecting protein from degradation in the rumen to enhance animal performance." *Dairy Ind. Res. Rpt.*

Schaeffer, L.R., A. Kerr and E.B. Burnside. (1982) "Dairy herd genetic differences for productions." *Can. J. Anim. Sci.* 62: 323-32.

Westell, R.A., E.B. Burnside and L.R. Schaeffer (1982) "Evaluation of Canadian Holstein-Friesian sires on disposal reasons of their daughters." *J. Dairy Sci.* 65: 3266-72.

PROCEEDINGS

Bagg, J.G., D.G. Grieve, J.H. Burton and J.B. Stone. (1982) "Crude protein requirements for dairy replacement heifers from 10 to 42 weeks of age to maximize skeletal growth." Amer. Soc. Anim. Sci. and Can. Soc. Anim. Sci. Ann. Mtg. Univ. of Guelph, Aug.

Burnside, E.B., L.R. Schaeffer, and B.W. Kennedy. (1982) "Design, structure and economics of a national dairy cattle improvement scheme." *Proc. Second World Congr. on Genetics Applied to Livestock Prod., VII.* Madrid, Spain, Oct. pp. 357-68.

Cady, R.A. and E.B. Burnside. (1982) "Evaluating dairy bulls for dystocia and mortality for their progeny." *Proc. Second World Congr. on Genetics Applied to Livestock Prod., VII.* Madrid, Spain, Oct. pp. 139-44.

Cady, R.A. and E.B. Burnside. (1982) "Evaluating Holstein bulls for maternal and direct genetic effect of dystocia." (Abstr.) *Amer. Soc. Anim. Sci. and Can. Soc. Anim. Sci. Ann. Mtg.* Univ. of Guelph, Aug.

Droppo, T.E., G.K. Macleod, D.G. Grieve and J.D. Summers. (1982) "Feeding value of moist corn gluten feed for lactating dairy cows." (Abstr.) *Amer. Soc. Anim. Sci. and Can. Soc. Anim. Sci. Ann. Mtg.* Univ. of Guelph, Aug.

Grieve, D.G. and R.J. Forster. (1982) "Effect of ration protein degradability on milk yield of dairy cows." *Proc. Univ. of Guelph Nutr. Conf.* Toronto. pp. 8-13.

Johansson, K. and B.W. Kennedy. (1982) "Estimation of genetic parameters of fertility traits in pigs." *Proc. Second World Congr. on Genetics Applied to Livestock Prod., VII.* Madrid, Spain, Oct. pp. 503-508.

Kennedy, B.W. (1982) "Genetic evaluation of growth rate and backfat of pigs by best linear unbiased prediction." *Proc. Second World Congr. on Genetics Applied to Livestock Prod., VII.* Madrid, Spain, Oct. pp. 214-19.

Kennedy, B.W., K. Johansson and L.R. Schaeffer. (1982) "Heritability and genetic correlations for growth rate and backfat in performance tested pigs." (Abstr.) *Amer. Soc. Anim. Sci. and Can. Soc. Anim. Sci. Ann. Mtg.* Univ. of Guelph, Aug. pp. 151-52.

Macleod, G.K. (1982) "Meeting protein requirements of young dairy cows." *Proc. Univ. of Guelph Nutr. Conf.* Toronto. pp. 1-7.

Macleod, G.K., D.G. Grieve and I. McMillan. (1982) "Effect of varying protein and energy densities in diets of first lactation cows." (Abstr.) *Proc. Amer. Dairy Sci. Assn.* State Univ., PA, June.

McClelland, L.A., G.B. Jansen, E.B. Burnside and S. Sivarajasingam. (1982) "Importance of total milking time in sire indexes for economic merit." (Abstr.) *Amer. Dairy Sci. Assn.* State Univ., PA, June. p. 98.

Mir, Z., G.K. Macleod, J.G. Buchanan-Smith, D.G. Grieve and W.L. Grovum. (1982) "Protecting soybean meal protein with NaOH or fresh blood for dairy cows in early lactation." (Abstr.) *Amer. Dairy Sci. Assn. Ann. Mtg.* State Univ., PA, June.

Mir, Z., G.K. Macleod, J.G. Buchanan-Smith, D.G. Grieve and W.L. Grovum. (1982) "Protein utilization by calves fed soybean meal protected with NaOH, fresh blood or fresh hydrolysate. (Abstr.) *Amer. Soc. Anim. Sci. and Can. Soc. Anim. Sci. Ann. Mtg.* Univ. of Guelph, Aug.

Sorensen, D.A. and B.W. Kennedy. (1982) "Estimation of genetic variances in control and selected populations." *Proc. Second World Congr. on Genetics Applied to Livestock Prod., VII.* Madrid, Spain, Oct. pp. 220-25.

Sorensen, D.A. and B.W. Kennedy. (1982) "Use of mixed model techniques in the analysis of selection experiments." (Abstr.) *Amer. Soc. Anim. Sci. and Can. Soc. Anim. Sci. Ann. Mtg.* Univ. of Guelph, Aug. pp. 164-65.

Srihara, P., J.H. Burton and B.W. Wilkie. (1982) "Effect of processing and peptic digestion on the activity of soybean antigens." *Proc. Amer. Dairy Sci. Assn.* State Univ., PA, June.

BOOKS, THESES, REPORTS

Forster, R.J. (1982) *The effect of dietary protein degradability on cows in early lactation.* M.Sc. Thesis. Univ. of Guelph, Jan.

Schwartz, C.J., B.W. Kennedy and E.B. Burnside. (1982) *Comparison of on-farm and central laboratory testing for butterfat.* Rpt. for OHIC and Anim. Prod. Div. of Agric. Can. Dec. 57 pp.

PRESENTATIONS

Grieve, D.G. (1982) Protein recommendations for dairy cattle. Man. Dairy Ext. Workshop. Aug.

Srihara, P., J.H. Burton, H.W. Chapman, W.L. Aroviun, J.G. Buchanan-Smith and B.N. Wilkie. (1982) Systematic effects of soybean allergens applied to isolated loops of intestine. *Amer. Soc. Anim. Sci. and Can. Soc. Anim. Sci. Ann. Mtg.* Univ. of Guelph, Aug.

AUDIO VISUAL

Grieve, D.G. (1982) Feeding protein. CKNX videotape interview. May 11.

Swine

PERIODICALS

Evans, G., M. Dobias, G.J. King and D.T. Armstrong. (1982) "Estrogen, androgen and progesterone biosynthesis by theca and granulosa of preovulatory follicles in the pig." *Biol. Reprod.* 25: 673-82.

James, L.J. and T.K. Smith. (1982) "Effect of dietary alfalfa on zearalenone toxicity and metabolism in rats and swine." *J. Anim. Sci.* 55: 110-18.

Jones, S.D.M., O.B. Allen and C.R. Haworth. (1982) "The accuracy of two recording instruments in the measurement of subcutaneous fat thickness in pork carcasses." *Can. J. Anim. Sci.* 62: 731-38.

King, G.J., J.S. Walton and W.T.K. Bosu. (1982) "A preliminary evaluation of treatments for anestrus in gilts." *Can. Vet. J.* 23: 288-90.

Moran, E.T., Jr., B. Hunter, P. Ferket, L.G. Young and L.G. McGirr. (1982) "High tolerance of broilers to vomitoxin from corn infected with Fusarium graminearum." *Poult. Sci.* 61: 1828-31.

Smith, T.K. (1982) "Influence of mycotozins on protein and amino acid utilization." *Fed. Proc.* 41: 2828-32.

Swatland, H.J. (1982) "Cardiac activity during the exsanguination of pigs in an abattoir." *Can. Inst. Food Sci. Technol. J.* 15: 161-64.

Swatland, H.J. (1982) "Elimination of sarcoplasmic argyrophilia in the delineation of muscle fibre boundaries with silver." *Microskopie.* 39: 317-22.

Swatland, H.J. (1982) "Evaluation of pH-related aspects of pork quality by capacitance measurements in an abattoir." *Can. J. Anim. Sci.* 62: 725-30.

Swatland, H.J. (1982) "Fiber optic spectrophotometry and the wetness of meat." J. Food Sci. 47: 1940-43.

Swatland, H.J. (1982) "Histology of allometric growth in hindlimb muscles of pigs." *J. Agric. Sci., Camb.* 98: 629-32.

Swatland, H.J. (1982) "Intermuscular variation in the physical properties of pork." *Can. Inst. Food Sci. Technol. J.* 15: 92-95.

Swatland, H.J. (1982) "Neuromuscular spindles in bovine foetuses with hereditary muscle fibre hyperplasia." *Experientia.* 38: 855.

Swatland, H.J. (1982) "Quantitative histochemistry of muscle enlargement and post mortem metabolism." *Curr. Topics Vet. Med. Anim. Sci.* 16: 278-305.

Swatland, H.J. (1982) "The challenges of improving meat quality." *Can. J. Anim. Sci.* 62: 15-24.

Swatland, H.J., P. Ward and P.V. Tarrant. (1982) "Electrical capacitance of dark-cutting beef." *J. Food Sci.* 47: 686-88.

Young, L.G., G.J. King, L. McGirr and J.C. Sutton. (1982) "Moldy corn in diets of gestating and lactating swine." *J. Anim. Sci.* 54: 976-82.

PROCEEDINGS

Johansson, K. and B.W. Kennedy. (1982) "Estimation of genetic parameters of fertility traits in pigs." *Proc. Second World Congr. on Genetics Applied to Livestock Prod., VII.* Madrid, Spain, Oct. pp. 503-08.

Kennedy, B.W. (1982) "Genetic evaluation of growth rate and backfat of pigs by best linear unbiased prediction." *Proc. Second World Congr. on Genetics Applied to Livestock Prod., VII.* Madrid, Spain, Oct. pp. 214-19.

Kennedy, B.W., K. Johansson and L.R. Schaeffer. (1982) "Heritability and genetic correlations for growth rate and backfat in performance tested pigs." (Abstr.) *Amer. Soc. Anim. Sci. and Can. Soc. Anim. Sci. Ann. Mtg.* Univ. of Guelph, Aug. 8-11 pp. 151-52.

BOOKS, THESES, REPORTS

Carson, M.S. (1982) *Effect of dietary fibre and non-nutritive mineral additives on T-2 toxicosis in rats.* M.Sc. Thesis. Univ. of Guelph. Jan.

Grieve, G.D. and E.E. Wheeler. (1982) *Effect of plant population for whole plant corn silage to be fed as roughage to lactating cows.* (Abstr.) OMAF and OAC Advisory Agdex 410/05 82-02-18. Aug.

Smith, T.K. (1982) *Prevention and treatment of mycotoxicoses. Mycotoxins: A Canadian Perspective.* Submitted to Environmental Secretariat, Res. Council. Ottawa.

PRESENTATIONS

Fortin, A., S.D.M. Jones and C.R. Haworth. (1982) Comparison of the New Zealand Grading Probe and the Danish Fat-O-Meater to predict pork carcass cutability. Intl. Symp. Meat Sci. and Technol. Lincoln, NB, Nov.

Jones, S.D.M. (1982) Electronic grading and the prediction of lean content in swine carcasses. Can. Pork Council semi-ann. Mtg. Bridgewater, N.S., July.

Smith, T.K. (1982) "Effect of orally-administered, non-nutritive ion-exchange resin on metabolism and excretion of zearalenone in rats. Can. Fed. Biol. Soc. Ann. Mtg. Edmonton, Alta., June.

Smith, T.K. (1982) Effect of dietary protein on execretion and tissue residues of zearalenone and metabolites in rats. Fed. Amer. Soc. Exp. Biol. Ann. Mtg. New Orleans, LA, April.

Smith, T.K. and M.S. Carson. (1982) Effect of diet on T-2 toxicosis in rats. (Abstr.) Amer. Chem. Soc. West. Reg. Mtg. San Francisco, CA, Oct.

Smith, T.K. and M.S. Carson. (1982) Effect of dietary alfalfa on excretion and tissue residues of (3H) T-2 toxin in rats. Triennial Joint Mtg. Amer. Inst. Nutr., Amer. Soc. Clin. Nutr. and Can. Soc. Nutr. Sci. State College, PA, July.

Smith, T.K. and M.S. Carson. (1982) Effect of dietary bentonite on excretion and tissue residues of (3H) T-2 toxin in rats. Amer. Soc. Anim. Sci. and Can. Soc. Anim. Sci. Ann. Mtg. Univ. of Guelph. Aug.

Poultry

PERIODICALS

Etches, R.J., J. McCutcheon, P.A. McBride-Warren and R.G. Brown. (1982) "The ovulation-inducing activity of highly purified ACTH in the hen." *Comp. Biochem. Physiol.* A, 72: 195-98.

Ferket, P.R. and E.T. Moran Jr. (1982) "Effect of a low plane of nutrition from starting through breeder period on reproductive performance of large white toms." (Abstr.) *Poult. Sci.* 61: 1464.

Jackson, M.E., G.W. Friars and I. McMillan. (1982) "The determination of optimum marketing time for layers in Ontario." *Ont. Egg Producers' Mktg. Bd. Newsl. July.*

Jackson, S., J.D. Summers and S. Leeson. (1982) "The response of male broilers to varying levels of dietary protein and energy." *Nutr. Rpt. Intl.* 25: 601-12.

Jackson, S., J.D. Summers and S. Leeson. (1982) "Effect of dietary protein and energy on broiler carcass composition and efficiency of nutrient utilization." *Poult. Sci.* 61: 2224-31.

Jackson, S., J.D. Summers and S. Leeson. (1982) "Effect of dietary protein and energy on broiler performance and production costs." *Poult. Sci.* 61: 2232-40.

Lang, G.F., R.J. Ecthes and J.S. Walton. (1982) "The effect of aminoglu-thethamide on steroidgenesis and ovulation in the hen." *Poult. Sci.* 61: 1498.

Leeson, S. (1982) "Controlling the appetite of breeders." *Poult. Dig.* Oct.

Leeson, S. (1982) "Controlling the breeders' appetite." *Feed Mgmt.* April.

Leeson, S. (1982) "Factors to consider in setting biotin specifications of poultry diets." *Feedstuffs.* Aug.

Leeson, S. (1982) "New concepts in nutritional management of the pullet." *California Poultryman.* Univ. Cal., Sept.

Leeson, S. (1982) "Nutrition for the embryo." *Feed Mgmt.* Oct.

Leeson, S. (1982) "Nutrition of the pullet." *Poult. Dig.* Oct.

Leeson, S. (1982) "Pullet nutrition and body weight." *Feed Mgmt.* Jan.

Leeson, S. (1982) Vitamin stability and availability." *Feed Mgmt.* July.

Leeson, S. and J.D. Summers. (1982) "Effect of high dietary levels of supplemental zinc, manganese, copper or iron on broiler performance to three weeks and accumulation of these minerals in tissue and excreta." *Nutr. Rpt. Intl.* 25: 591-99.

Leeson, S. and J.D. Summers. (1982) "Use of single-stage low protein diets for growing leghorn pullets." *Poult. Sci.* 61: 1684-91.

Leeson, S., J.D. Summers and J. Proulx. (1982) "Production and carcass characteristics of the duck." *Poult. Sci.* 61: 2456-64.

Leeson, S., J.P. Walker and J.D. Summers. (1982) "Performance of laying hens subjected to intermittent lighting initiated at 24 weeks of age." *Poult. Sci.* 61: 567-68.

Moran, E.T., Jr. (1982) "Production and carcass quality responses of early and late marketed large toms to added dietary fat during the finishing period." *Poult. Sci.* 61: 919-24.

Moran, E.T., Jr., P.R. Ferket and J.B. Blackman. (1982) "Maintenance nitrogen requirements of the small white turkey breeder hen." (Abstr.) *Poult. Sci.* 61: 1516-17.

Reinhart, B.S. and G.I. Hurnik. (1982) "Hatching performance of Cryovac enclosed hatching eggs stored in a high humidity environment." *Poult. Sci.* 61: 564-66.

Schang, M.J., S. Leeson and J.D. Summers. (1982) "Effect of double force feeding on true metabolizable energy." *Can. J. Anim. Sci.* 62: 963-65.

Schang, M.J., S. Leeson and J.D. Summers. (1982) "Effect of starvation and force feeding on body weight recovery time of adult roosters." *Can. J. Anim. Sci.* 62: 307-309.

Shen, H., H.D. Summers and S. Leeson. (1982) "Influence of a vitamin D deficiency on egg shell, membrane, and egg shell weight." *Poult. Sci.* 61: 746-49.

Summers, J.D. (1982) "Are broiler breeders being underfed in early lay stage?" *Poult. Dig.* p. 202.

Summers, J.D., H. Shen and S. Leeson. (1982) "The value of canola seed in poultry diets." *Can. J. Anim. Sci.* 62: 861-68.

PROCEEDINGS

Akbar, A.K., J.S. Gavora, G.W. Friars and R.S. Gowe. (1982) "Composition of eggs by commercial size categories: Effect of genotype, age and diet." (Abstr.) *Amer. Soc. Anim. Sci. and Can. Soc. Anim. Sci. Ann. Mtg.* Univ. of Guelph, Aug. p. 134.

Friars, G.W., C.Y. Lin and D.L. Patterson. (1982) "Interrelationships of body weight, feed intake and carcass composition in broiler chickens." (Abstr.) *Amer. Soc. Anim. Sci. and Can. Soc. Anim. Sci. Ann. Mtg.* Univ. of Guelph, Aug. p. 147.

Moran, E.T., Jr. (1982) "Using estradiol and feed energy-protein ration to finish the broiler tom." *Proc. Poult. Ind. School.* Univ. of Guelph. pp. 28-32.

Summers, J.D. (1982) "Broiler carcass composition." *Proc. Poult. Ind. School.* p. 21.

Summers, J.D. (1982) "Broiler carcass composition - Nutritional influences." *Proc. Virginia Feed Conv. and Nutr. Conf.* p. 35.

Summers, J.D. (1982) "Feeding today's broiler breeder." *Univ. of Guelph Nutr. Conf. for Feed Manufacturers.* Toronto, April. p. 82.

Summers, J.D. (1982) "Layer protein needs." *Proc. Virginia Feed Conv. and Nutr. Conf.* p. 20.

PRESENTATIONS

Atteh, O. and S. Leeson. (1982) Excess calcium and magnesium in laying hen mineral metabolism. Poult. Sci. Assn. Ann. Mtg. Davis, CA, Aug.

Clunies, M.G. and S. Leeson. (1982) Factors affecting in vitro estimation of poultry diet digestibility. Poult. Sci. Assn. Mtg. Davis, CA, Aug.

Etches, R.J. (1982) Maturation of ovarian follicles. 17th Br. Poult. Sci. Symp. Univ. of Reading, England, Sept.

Lee, B.D., W.D. Morrison, S. Leeson and H.S. Bayley. (1982) Effects of feather cover and insulative jackets on metabolic role of laying hens. *Poul. Sci.* (in press).

Leeson, S. (1982) Broiler and turkey nutrition research. San Joquin Valley Nutritionists' Mtg. Modesto, CA, May.

Leeson, S. (1982) Broiler breeder nutrition. Poult. Ind. Sch. Univ. of Guelph, Jan.

Leeson, S. (1982) Broiler, layer and turkey nutrition. Ont. Hatchery Assn. CCAT, May.

Leeson, S. (1982) Calcium and magnesium antagonism in layers and broilers. ECAN. Winnipeg, Man., June.

Leeson, S. (1982) Factors affecting the biotin specifications of poultry diets. Univ. Guelph Nutr. Conf. Toronto, April.

Leeson, S. (1982) Feeding the laying hen. Ont. Egg Bd. Seminar. Watford, Oct.

Leeson, S. (1982) Layer nutrition. Univ. Calif. Poult. Inst. Chino, CA, May.

Leeson, S. (1982) New concepts in layer nutrition. Univ. Calif. Poult. Inst. Escalon, CA, May.

Leeson, S. (1982) New concepts in poultry nutrition. Univ. Calif. Poult. Inst. Escalon, CA, May.

Leeson, S. (1982) New concepts in pullet nutrition. Univ. Calif. Poult. Inst. Chino, CA, May.

Leeson, S. (1982) Nutrition and embryology. Ont. Acad. Avian Med. Guelph, Feb.

Leeson, S. (1982) Nutrition and leg disorders. Ont. Hatchery Assn. CCAT, May.

Bees

PERIODICALS

Milne, C.P., Jr. (1982) "Laboratory measurement of brood disease resistance in the honeybee. I. Uncapping and removal of freeze-killed brood by newly emerged workers in laboratory test cages." *J. Apic. Res.* 21: 111-14.

Murrell, D.C., D.W. Tomes and R.W. Shuel. (1982) "Inheritance of nectar production in birdsfoot trefoil." *Can. J. Plant Sci.* 62: 101-105.

Murrell, D.C., R.W. Shuel and D.T. Tomes. (1982) "Nectar production and floral characteristics in several selections of birdsfoot trefoil (Lotus corniculatus)." *Can. J. Plant Sci.* 62: 361-71.

PRESENTATIONS

Milne, C.P., Jr. (1982) Honeybee hygienic behaviour and resistance to chalk-brood. Joint Mtgs. Entomol. Soc. Amer., Can. and Ont. Toronto, Dec.

Milne, C.P., Jr. (1982) Queen selection program. Ont. Beekeepers' Assn. Summer Mtg. Univ. of Guelph, July.

Shuel, R.W. (1982) New nectar sources and improvement of nectar plants. OBA Ann. Mtg. Toronto, Dec.

Cereals

PERIODICALS

Bagnara, D., and T.B. Daynard. (1982) "Rate and duration of kernel growth in the determination of maize (Zea mays L.) kernel size." *Can. J. Plant Sci.* 62: 579-87.

Cardy, B.J. and L.W. Kannenberg. (1982) "Alloyzymic variability among maize inbred lines and hybrids: Applications for cultivar identification." *Crop Sci.* 22: 1016-20.

Choo, T.M. and E. Reinbergs. (1982) "Analyses of skewness and kurtosis for detecting gene interaction in a doubled haploid population." *Crop Sci.* 22: 231-35.

Choo, T.M. and E. Reinbergs. (1982) "Estimation of the number of genes in doubled haploid populations of barley." *Can. J. Genet. Cytol.* 24: 337-41.

Choo, T.M., E. Reinbergs and S.J. Park, (1982) "Comparison of frequency distribution of doubled haploid and single seed descent lines in barley." *Theor. Appl. Genet.* 61: 215-18.

Daynard, T.B., T.J. Vyn, E.A. de Remy and J. Van Dam. (1982) "Research on crop rotational benefits to corn." *1982 Ann. Rpt.* Crop. Sci. Dept. Univ. of Guelph.

de St. Remy, E.A. and T.B. Daynard. (1982) "Effects of tillage methods on earthworm populations in monoculture corn." *Can. J. Soil Sci.* 62: 699-703.

Falk, D.E. and K.J. Kasha. (1982) "A vegetative dwarf mutant in barley." *BGN.* 12: 69-72.

Falk, D.E. and K.J. Kasha. (1982) "Registration of a shrunken endosperm, male sterile germplasm to facilitate hybridization in barley." *Crop Sci.* 22: 450.

Falk, D.E., E. Reinbergs and K.J. Kasha. (1982) "Utilization of sex l msg6 stocks for hybridization in barley." *Barley Gen. Newsl.* 12: 80-83.

Hunt, L.A. and B.D. McKersie, J.C. Sutton, R. de Graaf, W.N. Migus, M. van der Poorten, I. Aguilar, D. Walker, D.E. Falk and A.M. Chapleau. (1982) "Winter wheat breeding and associated research." *Ann. Wheat Newsl.* 27: 51-53.

Jofriet, J.C. and T.B. Daynard. (1982) "Pressure-density models for whole shelled, ground shelled and ground ear corn." *Trans. ASAE* 25: 725-29 and 734.

Jofriet, J.C. and T.B. Daynard. (1982) "Tower silo capacities." *OMAF Factsheet.* Aug.

Kasha, K.J. (1982) "Coordinators' report for barley chromosome 6." *BGN.* 12: 90-2.

Kasha, K.J. (1982) "Coordinators' report on haploid barley." *BGN.* 12: 95-96.

Kingsbury, C.H., R.E. Macartney, J.G. Norrish, T.B. Daynard, G.K. Macleod and J.C. Jofriet. (1982) "High moisture corn." *OMAF Factsheet.*

McKersie, B.D., B.M. McDermott, L.A. Hunt and V.W. Poysa. (1982) "Changes in carbohydrate levels during ice encasement and flooding of winter cereals." *Can. J. Bot.* 60: 1822-26.

Muldoon, J.F. and T.B. Daynard. (1982) "Corn trials in Northern Ontario." *1982 Ann. Rpt.* Crop Sci. Dep. Univ. of Guelph. pp. 75-78.

Poysa, V.W. and E. Reinbergs. (1982) "Effects of temperature, photoperiod, and vernalization on development and yield in facultative triticale." *Zeitschrift fur Acker-und Pflanzenbau.* 51: 282-93.

Poysa, V.W., E. Reinbergs and R. DeGraaf. (1982) "Winter triticale breeding and associated research." *Ann. Wheat Newsl.* 28: 53.

Reddy, V.M. and T.B. Daynard. (1982) "Factors affecting kernel development in corn." *1982 Ann. Rpt.* Crop Sci. Dept. Univ. of Guelph.

Reinbergs, E. (1982) "Barley in Ontario" *Barley Newsl.* 25: 52-53.

Reinbergs, E., R.J. McLaughlin and S.M. Lockington. (1982) "Growing milling oats in Ontario." *IFIP.* Agdex 113/82.

Tanino, F. B.D. McKersie. (1982) "Vital staining of winter cereal crowns after freezing, icing or flooding stress." *Plant Physiol.* (Sppl.) 69: 108.

Tollenaar, M. and T.B. Daynard. (1982) "Effect of source-sink ratio on dry matter accumulation and leaf senescence of maize." *Can. J. Plant Sci.* 62: 855-60.

Tollenaar, M., K. Gilmer and G.K. Walker. (1982) "Maximum dry matter productivity of corn." *1982 Ann. Rpt.* Crop Sci. Dept. Univ. of Guelph.

Twumasi, A.S. and R.B. Hunter. (1982) "Evaluation of quantitative methods for determining stalk quality in short-season corn genotypes." *Can. J. Plant Sci.* 62: 55-60.

Twumasi, A.S. and R.B. Hunter. (1982) "Lodging enhancing techniques for use on corn performance trials in short-season areas." *Can. J. Plant Sci.* 62: 299-304.

Wheatley, W.G. and K.J. Kasha. (1982) "Chromosome elimination in binucleate cells of a (2x) H. vulgare x (2x) H. bulbosum hybride." *BGN.* 12: 74-77.

Wheatley, W.G. and K.J. Kasha. (1982) "Effects of cycloheximide treatments on prophase and metaphase cells of a (2x) Hordeum vulgare x (2x) H. bulbosum hybrid." *BGN.* 12: 72-74.

Young, L.G., V. Poysa and E. Reinbergs. (1982) " 'OAC Wintri' triticale in diets of young pigs." *IFIP.* Sept.

Ziauddin, A. and K.J. Kasha. (1982) "Giemsa C-band identification of rye chromosomes in some advanced ones of winter triticale." *Can. J. Genet. Cytol.* 24: 721-27.

PROCEEDINGS

Falk, D.E., K.J. Kasha and E. Reinbergs. (1982) "Presowing selection of genetic male sterile plants to facilitate hybridization in barley." *Proc. 4th Intl. Barley Genet. Symp.* Edinburgh, Scotland. *Barley Genet. IV.* pp. 778-85.

Kannenberg, L.W. (1982) "Report of the subcommittee on uniform tests in the 100-300 maturity series." *Rpt. North Central Corn Breeding Res. Comm. (NCR-2) Mtg.* Des Plaines, IL, Mar. pp. 50-64.

Kasha, K.J. (1982) " Production and applications of haploids in barley." *Proc. 5th Latin Amer. Genet. Congr.* Chile, South America. *Genetica.* pp. 127-35.

Kasha, K.J., L. Lott and G. Seguin-Swartz. (1982) "Genetic stability of haploid cell cultures." *Proc. 5th Intl. Congr. Plant Tissue and Cell Cult.* Tokyo, Japan. pp. 405-408.

Kasha, K.J. and E. Reinbergs. (1982) "Recent developments in the production and utilization of haploids in barley." *Pro. 4th Intl. Barley Genet. Symp.* Edinburgh, Scotland. *Barley Genet. IV.* pp. 655-65.

Reinbergs, E. (1982) "Varieties and production techniques of barley, oats and triticale." *Proc. South West. Ont. Farmers' Wk.* RCAT, Jan. pp. B1-B2.

Tollenaar, M. and T.B. Daynard. (1982) "Limitations to yield to maize in Southern Ontario." *Proc. Breaking the Climate/Soil Barriers to Crop Yield.* Univ. of Guelph. pp. 75-84.

BOOKS, THESES, REPORTS

Atlin, G.N. (1982) *Comparison of growth, whole plant yield and nutritional quality of diploid and autotetraploid maize synthetics.* M.Sc. Thesis. Univ. of Guelph, Dec.

DeGraaf, R. (1982) *The effect of nitrogen fertilization and seeding rate on triticale (X Triticosecale Wittmack) in Ontario.* M.Sc. Thesis. Univ. of Guelph.

Falk, D.E. (1982) *Haploid production and related intergeneric crossing in hexaploid wheat (Triticum aestivum L.).* Ph.D. Thesis. Univ. of Guelph.

Gamble, E.E. (1982) *Use certified seed.* OMAF news release.

Hunt, L.A. and P.N. Mehta with Agric. Can. and RCAT. (1982) *Ann. Rpt. on Cooperative Winter Wheat Variety Test in Ontario.*

Kannenberg, L.W. (1982) *Corn hybrid recommendation released.* OMAF news releae. Jan.

Kasha, K.J. and G. Seguin-Swartz. (1982) "Haploid in crop improvement." *Cytogenetics of Crop Plants.* Eds. M.S. Swaminathan, P.K. Gupta and U. Sinha. MacMillan India Ltd. pp. 19-69.

Marsolais, A.A. (1982) *The influence of environmental factors and genotype on in vitro androgenesis in wheat.* M.Sc. Thesis. Univ. of Guelph.

Mather, D.E. (1982) *Genetic analyses of the protein content and lysine content of triticale (X Triticosecale Wittmack).* M.Sc. Thesis. Univ. of Guelph.

Migus, W.N. (1982) *Flag leaf photosynthetic rate and morphological characteristics in wheat.* Ph.D. Thesis. Univ. of Guelph.

Muldoon, J.F. and T.B. Daynard. (1982) *Report of corn trials in Northern Ontario in 1981.* Crop Sci. Dept. Univ. of Guelph. 15 pp.

Muldoon, J.F. and T.B. Daynard. (1982) *Report of corn trials in Northern Ontario in 1981 and 1982.* Crop Sci. Dept. Univ. of Guelph. 16 pp.

Reinbergs, E. (1982) *Barley breeding and research at Guelph.* Progress Rpt. for Brewing and Malting Barley Res. Inst.

Reinbergs, E. (1982) *Barley triticale recommendations.* OMAF press release. Feb.

Reinbergs, E. (1982) *Co-operative winter barley tests.* Progress Rpt. Univ. of Guelph.

Reinbergs, E. and L.A. Hunt. (1982) *Regional tests in Ontario.* OMAF Progress Rpt.

Van der Poorten, G. (1982) *Influence of genotype, temperature and assimilates on some selected grain growth parameters in wheat (Triticum aestivum L.)* Ph.D. Thesis. Univ. of Guelph.

Vattikonda, M.R. (1982) *The performance of recommended corn (Zea mays L.) hybrids when grown for grain compared to whole-plant silage production.* M.Sc. Thesis. Univ. of Guelph, April.

Walker, D.F. (1982) *Agronomic characteristics of Fredrick winter wheat (Triticum aestivum L.) as affected by fertilizer nitrogen, fungicides and the growth regulator 'cycocel.'* M.Sc. Thesis. Univ. of Guelph.

PRESENTATIONS

Cardy, B.J., Kannenberg, L.W. and W.D. Beversdorf. (1982) Genetics identification of maize and soybean cultivars using electrophoretic techniques. Ann. Mtg. Agric. Inst. Can. Vancouver, B.C., July.

Daynard, T. (1982) Developments in Ontario corn production. Corn School. Morden, Man.

Gamble, E.E. (1982) Certified seed and seed quality. Dufferin Co. S.C.I.A. Shelburne.

Kannenberg, L.W. (1982) Five years of HOPE. NCR-2 Corn Mtgs. Des Plaines, IL, Mar.

Reinbergs, E. (1982) Barley in Ontario. Master Brewers' Assn. Can. Tech. Mtg. Toronto, Mar.

Reinbergs, E. (1982) Development and maintenance of breeder seed. Plant Breeding Technicians Training Program sponsored by OAC and OMAF. Guelph, Feb.

Reinbergs, E. (1982) Ontario cereals. Ciba-Geigy Info. Mtg. London, Feb.

AUDIO VISUAL

Reinbergs, E. (1982) Varieties of oats and barley recommended for 1982. TV presentation. Jan.

Forage

PERIODICALS

Busch, L.V. and B.R. Christie. (1982) "Verticillium wilt of alfalfa." *Highlights Agric. Res. Ont.* 5(1): 4-6.

Christie, B.R. and D. Yu. (1982) "Sampling for dry matter content in forages." *Forage Notes.* 26: 33-35.

Fulkerson, R.S. (1982) "Alfalfa blotch leafminer effect on hay quality." *IFIP.* May.

Fulkerson, R.S. (1982) "Alfalfa grass mixtures." *IFIP.* Mar.

Fulkerson, R.S. (1982) "Critical fall harvest period for birdsfoot trefoil." *IFIP.* Mar.

Fulkerson, R.S. (1982) "Fall harvest effects on the yield and persistence of birdsfoot trefoil (Lotus corniculatus L.)." *Forage Notes.* 26: 13-14.

Fulkerson, R.S. (1982) "Forage establishment tips." *Forage Seedfax.* Spring Issue.

Fulkerson, R.S. (1982) "Forage seeding rates." *Forage Seedfax.* Spring Issue.

Fulkerson, R.S. (1982) "Grow your own nitrogen." *Agric. Books.* 8: 61. Feb.

Fulkerson, R.S. (1982) "Growth and development of some legume roots." *Forage Notes.* 26: 15-19.

Fulkerson, R.S. (1982) "Plowdown pointers." *Forage Seedfax.* Spring Issue.

Fulkerson, R.S. (1982) "Red clover plowdown." *IFIP.* Mar.

McKersie, B.D. and D.T. Tomes. (1982) "A comparison of seed quality and seedling vigor in birdsfoot trefoil." *Crop Sci.* 22: 1239-41.

McKersie, B.D. and D.T. Tomes. (1982) "Effect of heating on the quality of birdsfoot trefoil seeds." *IFIP.* Agdex 122/65.

Tomes, D.T., E.B. Swanson, C.T. Campbell and K. Glover (1982) "Selection at the cellular level in crop plants: Potential for agriculture." *Highlights Agric. Res. Ont.* 5(1): 1-3.

PROCEEDINGS

Swanson, E.B. and D.T. Tomes. (1982) "Expression of 2,4-D tolerance among plants regenerated from in vitro selection in birdsfoot trefoil." *Proc. 5th Intl. Plant Tissue and Cell Culture Assn.* Tokyo, Japan. pp. 497-98.

BOOKS, THESES, REPORTS

Campbell, C.T. (1982) *Shoot-tip culture of red clover (Trifolium pratense L.) and alfalfa (Medicago sativa L.).* M.Sc. Thesis. Univ. of Guelph.

Fulkerson, R.S. (1982) *Establishing forages.* OMAF feature article. Dec.

Fulkerson, R.S. (1982) *Red clover for feed, seed and soil.* OMAF Publication 221.

Fulkerson, R.S. (1982) *Red clover plowdown.* OMAF feature article. Dec.

Fulkerson, R.S. (1982) *Superior alfalfa.* OMAF feature article. Dec.

Orshinsky, B.R. (1982) *Spontaneous and induced variation in tissue cultures and regenerated plants of birdsfoot trefoil (Lotus corniculatus L.).* M.Sc. Thesis. Univ. of Guelph.

Papadopoulos, Y.A. (1982) *Proteolysis in grass and legume silages.* M.Sc. Thesis. Univ. of Guelph.

Tomes, D.T. and E.B. Swanson. (1982) "Application of in vitro selection to plant improvement." *Application of Plant Cell and Tissue Culture to Agriculture and Industry.* Eds. D.T. Tomes, B.E. Ellis, P.M. Harney, K.J. Kasha and R.L. Peterson. Univ. of Guelph. pp. 25-43.

Winch, J.E. (1982) *An update on the infrared equipment for estimating forage quality.* Crop Sci. Dept. Univ. of Guelph, May-June.

PRESENTATIONS

Christie, B.R., L.V. Busch and Y.A. Papadopoulas. (1982) Response to selection for verticillium resistance in alfalfa. Can. Soc. Agron. Ann. Mtg. Vancouver, B.C., July.

Orshinksy, B.R. and D.T. Tomes (1982) Comparison of plants derived from cuttings, node culture and EMS treated node cultures of birdsfoot trefoil. 10th Plant Development Workshop. Univ. of Guelph.

Tomes, D.T. and B.R. Orshinsky (1982) Variations of callus culture lines of birdsfoot trefoil in relation to in vitro selection, callus growth rate and shoot differentiation. 10th Plant Dev. Workshop. Uiv. of Guelph.

Tomes, D.T., C.T. Campbell, B.R. Orshinsky and E.B. Swanson. (1982) Application of tissue culture technology to forage legumes. 6th Ann. Trifolium Conf. Starkville, MS.

Tomes, D.T., C.T. Campbell, B.R. Orshinsky and E.B. Swanson. (1982) A summary of tissue culture studies in forage legumes at the Univ. of Guelph. Ntl. Alfalfa Improvement Conf. Davis, CA.

Winch, J.E. (1982) Feeding and pasture management. Elgin Co. Farm Mgmt. Wk. Sheep Mgmt. Day. Feb.

Winch, J.E. (1982) Forage production on the dairy farm. Co-op Dairy Prod. Seminar. Marsville, Jan.

Winch, J.E. (1982) Getting the most out of pasture. Simcoe Co. Farmers' Wk. Jan.

Winch, J.E. (1982) Pastures and pasture production. Grey-Bruce Co. SCIA. Jan.

Winch, J.E. (1982) Pastures, species and erosion. Central Agric. Up-Date. Bolton, Brockville, Apr.

AUDIO VISUAL

Winch, J,E. (1982) CLRA. CJOY Radio. Guelph, Aug.

Winch, J.E. (1982) Erosion control and industry. CJOY Radio. Guelph, Aug.

Winch, J.E. (1982) Vegetation and municipal ditches. CJOY Radio. Guelph, Aug.

Pulses and Other Crops

PERIODICALS

Beversdorf, W.D. and D.J. Hume. (1982) "Canola: A new oilseed crop for Ontario." *Highlights Agric. Res. Ont.* 5(4): 18-20.

Crane, C.F., W.D. Beversdorf, and E.T. Bingham. (1982) "Meiosis in haploid soybean." *Can. J. Genet. Cytol.* 24: 293-300.

Erikson, L.R. and W.D. Beversdorf. (1982) "Effect of selection for protein on lengths of growth stages in Glycine max x Glycine soja crosses." *Can. J. Plant Sci.* 62: 293-48.

Erickson, L.R. and W.D. Beversdorf. (1982) "Genotype x environment interactions for protein in Glycine max x G. soja crosses." *Crop Sci.* 22: 1099-101.

Hucl, P. and W.D. Beversdorf. (1982) "The inheritance of ozone insensitivity in Phaseolus vulgaris L." *Can. J. Plant Sci.* 62: 861-65.

Hucl, P. and W.D. Beversdorf. (1982) "The response of selected Phaseolus vulgaris L. cultivars to ozone under controlled fumigation and ambient field levels." *Can. J. Plant Sci.* 62: 561-69.

Hucl, P., W.D. Beversdorf and B.D. McKersie. (1982) "Ozone-insensitivity in Phaseolus vulgaris L.: Relationship of several stomatal and leaf surface parameters." *Can. J. Bot.* 60: 2187-91.

McKersie, B.D., P. Hucl and W.D. Beversdorf. (1982) "Solute leakage from susceptible and tolerant cultivars of Phaseolus vulgaris L. following ozone exposure." *Can. J. Bot.* 60: 73-78.

Pearen, R. and W.D. Beversdorf. (1982) "Rapeseed: Manipulating the crop." *Notes in Agric.* 18: 3-4.

Tu, J.C. and W.D. Beversdor. (1982) "Tolerance to white (Sclerotinia sclerotiorum (Lib.) DeBaryl) in Ex Rico 23, a cultivar of whitebean, Phaseolus vulgaris L." *Can. J. Plant Sci.* 62: 65-69.

Weiss, J. and W.D. Beversdorf. (1982) "Winter rapeseed — a potential crop for Ontario." *Notes in Agric.* 18: 7-8.

BOOKS, THESES, REPORTS

Beversdorf, W.D. (1982) *Whitebean breeding.* Ont. Bean Producers' Mktg. Bd. Feb.

Cramer, M.M. (1982) *Factors affecting selection for low linolenic acid in soybeans (Glycine max (L.) Merrill).* M.Sc. Thesis. Univ. of Guelph.

McKersie, B.C. and W.D. Beversdorf. (1982) *Developing ozone tolerant fieldbeans.* Ont. Min. Environ. Jan.

Rennie, B.C. (1982) *The effect of row width and a selection system for altered plant form, on white bean (Phaseolus vulgaris (L.)).* M.Sc. Thesis. Univ. of Guelph.

Weiss, J. (1982) *Transfer of cytoplasmically inherited triazine resistance into oilseed rape (Brassica campestris and B. napus) and preliminary comparison of in vitro and in vitro performance in near isogenic lines.* M.Sc. Thesis. Univ. of Guelph.

PRESENTATIONS

Beversdorf, W.D. (1982) Canadian Oilseed Cultivar development program. Can. Intl. Grain Inst. Winnipeg, Man. Sept.

Beversdorf, W.D. (1982) Field bean breeding and varieties. Bean Symposium. London, Apr.

Beversdorf, W.D. (1982) Ten answers to choosing your soybean varieties. RCAT Farmers' Weed Conf. Ridgetown, Jan.

Beversdorf, W.D. (1982) Triazine resistant canola: History and development. Triazine Resistant Canola Symp. Saskatoon, Sask., Mar.

Beversdorf, W.D. (1982) Whitebean breeding research. Ont. Bean Producers' Mktg. Bd. Seminar. Blyth, Mitchell, Delaware, Mar.

Beversdorf, W.D. and B. Forrest. (1982) Whitemold in field beans. Bean Symp. London, Apr.

Beversdorf, W.D. and D.J. Hume. (1982) Development of triazine resistant canola. Triazine Resistant Canola Workshop. Saskatoon, Sask., Mar.

Gamble, E.E. and D.S. Hoy. (1982) Soybean seed vigour research. Commercial Seed Analyst's Assn. of Canada Ann. Mtg. Toronto, Nov.

Gamble, E.E. and D.S. Hoy. (1982) Update on seed vigour in soybeans research. Select Seed Grower's Field Day, Ont. Seed Growers' Assn. Elora Res. Stn., July.

Vegetables

PERIODICALS

deMaisonneuve, C. and P.M. Harney. (1982) "Incorporation of genes for self-incompatibility into rutabaga." (Abstr.) *Rpt. Comm. on Hort. Res.* Can. Hort. Council. p. 127.

Deslandes, C. and P.M Harney. (1982) "Anther culture in asparagus." (Abstr.) *Rpt. Comm. on Hort. Res.* Can. Hort. Council. p. 126.

Dijak, M. and D.P. Ormrod. (1982) "Some physiological and anatomical characteristics associated with differential ozone sensitivity among pea cultivars." *Environ. Exp. Bot.* 22: 395-402.

Filadelfi, M.A. and A. Zatnak. (1982) "Preparation of chaconines by enzymic hydrolysis of potato berry alkaloids." *Phytochem.* 21: 250-51.

Grant, I. and P.M. Harney. (1982) "In vitro propagation of rutabaga root-pieces." *Can. J. Plant Sci.* 62: 189-94.

Grant, I. and P.M. Harney. (1982) "Inheritance of yield and other quantitative characters in Brassica napus var. napobrassica." *Can. J. Genet. Cytol.* 24: 459-65.

Harney, P.M. and J. Gunby. (1982) "Micropropagation of asparagus." (Abstr.) *Rpt. Comm. on Hort. Res.* Can. Hort. Council. p. 126.

Johnston, G.R. and R.G. Rowberry. (1982) "Simcoe: a new early-maturing, chipping potato variety." *Amer. Potato J.* 59: 39-43.

Mapplebeck, L. and H. Tiessen. (1982) "Correlation of asparagus seed size of Viking selection to percent emergence and size of crowns produced." (Abstr.) *Rpt. Comm. on Hort. Res.* Can. Hort. Council. p. 125.

Mapplebeck, L. and H. Tiessen. (1982) "Cover crops for water erosion control in an established asparagus field." (Abstr.) *Rpt. Comm. on Hort. Res.* Can. Hort. Council. p. 125.

Mapplebeck, L. and H. Tiessen. (1982) "Downward movement of herbicide residues in soils in asparagus fields." (Abstr.) *Rpt. Comm. on Hort. Res.* Can. Hort. Council. p. 124.

Mapplebeck, L. and H. Tiessen. (1982) "Phosphorus, potassium, magnesium and pH levels in soils of some Ontario asparagus fields." (Abstr.) *Rpt. Comm. on Hort. Res.* Can. Hort. Council. p. 125.

Mapplebeck, L. and H. Tiessen. (1982) "Priming asparagus seed treatment with polyethylene glycol (PEG8000)." (Abstr.) *Rpt. Comm. on Hort. Res.* Can. Hort. Council. p. 124.

Mapplebeck, L. and H. Tiessen. (1982) "Weed control in crown-established asparagus." (Abstr.) *Rpt. Comm. on Hort. Res.* Can. Hort. Council. p. 125.

Mapplebeck, L. and H. Tiessen. (1982) "Weed control in crown-established asparagus." *Exp. Comm. on Weeds Res. Rpt.: East Sect.*

Mapplebeck, L. and H. Tiessen. (1982) "Weed control in direct-seeded asparagus." (Abstr.) *Rpt. Comm. on Hort. Res.* Can. Hort. Council. p. 125.

Mapplebeck, L. and H. Tiessen. (1982) "Weed control in established asparagus." (Abstr.) *Rpt. Comm. on Hort. Res.* Can. Hort. Council. p. 125.

Nonnecke, I.L. (1982) "Is Canadian food self-sufficiency a realistic objective?" *The Grower.* Apr.

Nonnecke, I.L. (1982) "Rutabaga seed production." *Rpt. Comm. on Hort. Res.* Can. Hort. Council. p. 188.

Tiessen, H. (1982) "Asparagus variety trials." (Abstr.) *Rpt. Comm. on Hort. Res.* Can. Hort. Council. p. 126.

Tiessen, H. (1982) "Frost damage to roots of asparagus." (Abstr.) *Rpt. Comm. on Hort. Res.* Can. Hort. Council. p. 126.

Tiessen, H. (1982) "Planting depth of asparagus." (Abstr.) *Rpt. Comm. on Hort. Res.* Can. Hort. Council. p. 126.

Tiessen, H., M. Fitts and L. Mapplebeck. (1982) "Influence of treating seed with nutrient solutions on percent and rate of emergence of asparagus seed." (Abstr.) *Rpt. Comm. on Hort. Res.* Can. Hort. Council. p. 124.

Toivonen, P.M.A., E.C. Lougheed and A.W. Loughton. (1982) "Ethylene and storage of leafy vegetables." (Abstr.) *Rpt. Comm. on Hort. Res.* Can. Hort. Council. p. 187.

Walsh, J.R., E.C. Lougheed and A.W. Loughton. (1982) "Ethylene effects upon stored cabbage." (Abstr.) *Rpt. Comm. on Hort. Res.* Can. Hort. Council. p. 187-88.

Walsh, J.R., E.C. Lougheed and M. Valk. (1982) "Controlled atmosphere (CA) storage of celery." (Abstr.) *Rpt. Comm. on Hort. Res.* Can. Hort. Council. p. 187.

PROCEEDINGS

Khosla, S. and H. Tiessen. (1982) "Influence of pH on plant development and composition of asparagus officinalis L." (Abstr. No. 1496.) XXI *Intl. Hort. Congr.* Hamburg, Germany. Aug. 29-Sept. 4.

Toivonen, P.M.A. and E.C. Lougheed. (1982) "Controlled atmosphere storage of some cole crops." *Proc. Can. Soc. Hort. Sci.* 21: 27.

BOOKS, THESES, REPORTS

deMaisonneuve, C. (1982) *Incorporation of genes for self-incompatibility into rutabaga (Brassica napus L. ssp. rapifera (Metzg.) Sinsk.).* M.Sc. Thesis. Univ. of Guelph, Sept.

DesLandes, C. (1982) *Anther culture in Asparagus officinalis L. cv. Viking 2K.* M.Sc. Thesis. Univ. of Guelph, May.

Harney, P.M. (1982) "Tissue culture propagation of some herbaceous horticultural plants." *Application of Plant Cell and Tissue Culture to Agriculture and Industry.* Eds. D.T. Tomes, B.E. Ellis, P.M. Harney, K.J. Kasha and R.L. Peterson. Univ. of Guelph, pp. 187-208.

Lougheed, E.C. (1982) *Homemade hygrometers.* OMAF Publ. Agdex 707.

Nonnecke, I.L. (1982) *Vegetables.* Eds. New Can Encyclopedia Publishing Co. Edmonton, Alta: Hurtig Publishers. (in press).

Tiessen, H. (1982) *Influence of pH on plant development and composition of asparagus.* North Amer. Asparagus Res. Mtg. Sept.

Tiessen, H. (1982) *Personal Rpt.* Ntl. Res. Comm., Can. Food Processors' Assn. and Can. Hort. Council. Aug.

Tiessen, H. (1982) *Res. Rpt.* Asparagus Comm. , Ont. Veg. Res. Comm. Univ. of Guelph, Nov.

Tiessen, H. (1982) *Res. Rpt.* Ntl. Res. Comm., Can. Food Processors' Assn. and Can. Hort. Council. Nov.

Tiessen, H. (1982) *Res. Rpt.* Ont. Asparagus Growers' Assn. Ont. Nov.

Tiessen, H. (1982) *Res. Rpt.* Ont. Veg. Res. Comm. Ont. Feb.

PRESENTATIONS

Filadelfi, M.A. and A. Zitnak. (1982) A composite reference standard for the identification of potato glycoalkaloids. Can. Inst. Food Sci. Technol. Ann. Mtg. Montreal, Que., June.

Lougheed, E.C. (1982) Maintaining quality in vegetables. Ann. Mtg. Essex Co. Fruit and Veg. Growers' Assn. Leamington, Jan.

Lougheed, E.C. (1982) Storage of vegetables. Ann. Mtg. Quinte Veg. Growers' Assn. Belleville, Feb.

Nonnecke, I.L. (1982) Annual update on the rutabaga seed production. Ont. Fruit and Veg. Growers' Assn., Rutabaga Comm. Jan.

Nonnecke, I.L. (1982) Determining moisture requirements of horticulture crops. Ont. Hort. Conf. Feb.

Nonnecke, I.L. (1982) Mechanization of vegetable crops present and future. RCAT Farmers' Wk. Ridgetown, Jan.

Nonnecke, I.L. (1982) Rutabaga seed situation. Can. Hort. Council Mar.

Nonnecke, I.L. (1982) The rutabaga seed situation. Ont. Rutabaga Mktg. Bd. Ann. Mtg. Centralia, April.

Nonnecke, I.L. (1982) Vegetable production areas of the world. Canada Manpower Retraining Program. Chatham, Jan.

Tiessen, H. (1982) Asparagus research in Canada. Asparagus Growers' Field Day. Armstrong, B.C., July.

Tiessen, H. (1982) Asparagus research in Ontario. Michigan Asparagus Growers. Aug.

Tiessen, H. (1982) Asparagus varieties. Twilight Mtg., Norfolk Asparagus Growers. June.

Tiessen, H. (1982) Discussing asparagus research program. Quebec Veg. Growers. June.

Tiessen, H. (1982) Set up and managed N.F.T. lettuce operation. PODS. Ont. Place, June-Sept.

AUDIO VISUAL

Tiessen, H. (1982) Waste energy. Nanticoke Greenhouse Research Project. Radio tape.

Zitnak, A. (1982) Potato greening, bitterness and health aspects for consumer safety. CJOY Radio. Guelph, July.

Tree Fruits and Small Fruits

PERIODICALS

Berard, L.S. and E.C. Lougheed. (1982) “Electrolyte leakage from daminozide-treated apples held in air, low pressure and controlled atmosphere storage.” *J. Amer. Soc. Hort. Sci.* 197: 421-25.

Berard, L.S., E.C. Lougheed and D.P. Murr. (1982) “B-galactosidase activity of ‘McIntosh’ apples in storage.” *HortSci.* 17: 660-61.

Bodnar, J.M., J.T.A. Proctor and R.A. Cline. (1982) “Nutrient changes in apple leaves due to the spotted tentiform leafminer, Phyllonorycter blancardella (Fabr.).” (Abstr.) *Rpt. Comm. on Hort. Res.* Can. Hort. Council.

Cahill, B.T. and J.T.A. Protor. (1982) “Prediction of apple scab: a field study of ascospore maturation and discharge in Venturia inaequalis (Cke.) Wint.” (Abstr.) *Rpt. Comm. on Hort. Res.* Can. Hort. Council.

Evans, W.D. (1982) “Guelph SO1 synthetic strawberry breeding clone.” *Hort.Sci.* 17: 833-34.

Evans, W.D. (1982) “Interspecific hybridiztion in strawberry.” *Rpt. Comm. on Hort. Res.* Can. Hort. Council. Ottawa, Jan.

Evans, W.D. (1982) “Red raspberry yield trials.” *Rpt. Comm. on Hort. Res.* Can. Hort. Council. Jan.

Evans, W.D. (1982) “Strawberry cultivar and seeding trials. *Rpt. Comm. on Hort. Res.* Can. Hort. Council. Ottawa, Jan.

Kapotis, G.E., E.C. Lougheed, S.R. Miller and J.T.A. Proctor. (1982) “Low-02 storage of apples.” (Abstr.) *Rpt. Comm. on Hort. Res.* Can. Hort. Council. p. 192

Kapotis, G.E., E.C. Lougheed, C.L. Chu and D. Elfving. (1982) “Low-02 storage of Spartan and Empire apples.” (Abstr.) *Rpt. Comm. on Hort. Res.* Can. Hort. Council. p. 192.

Lougheed, E.C., P.D. Lidster and J.T.A. Proctor. (1982) “Friction discoloration of McIntosh apples from low-oxygen, controlled atmosphere storage.” *Plant Disease.* 66: 1119-20.

Proctor, J.T.A. (1982) “A leaf injury of Anjou pear.” (Abstr.) *Rpt. Comm. on Hort. Res.* Can. Hort. Council.

Proctor, J.T.A. (1982) “Ginseng seed and seedling sources and some publications on growing ginseng.” *IFIP.* Oct.

Proctor, J.T.A. (1982) “Wind injury of Anjou pear.” *Plant Disease.* 66: 1169-70.

Proctor, J.T.A., J.M. Bodnar, W.J. Blackburn and R.L. Watson. (1982) “Analysis of the effects of the spotted tentiform leafminer (Phyllonorycter blancardella F.) on the photosynthetic characteristics of apple leaves.” (Abstr.) *Rpt. Comm. on Hort. Res.* Can. Hort. Council.

Proctor, J.T.A., J.M. Bodnar, W.J. Blackburn and R.L. Watson. (1982) “Analysis of the effects of the spotted tentiform leafminer (Phyllonorycter blancardella F.) on the photosynthetic characteristics of apple leaves.” *Can. J. Bot.* 60: 2734-40.

Proctor, J.T.A., W.J. Blackburn, T.J. Gillespie and B.H. MacNeill. (1982) “A model to estimate discharge of ascospores of Venturia inaequalis.” (Abstr.) *Rpt. Comm. on Hort. Res.* Can. Hort. Council.

PROCEEDINGS

Kapotis, G.E., E.C. Lougheed and S.R. Miller. (1982) “Bioelectric resistance and chilling disorders of McIntosh apples.” (Abstr.) *Proc. Can. Soc. Hort. Sci.* 21: 23.

Proctor, J.T.A. (1982) “Prediction of apple scab ascospore discharge using degree days.” *79th Ann. Mtg. Amer. Soc. Hort. Sci.* Iowa State Univ., Ames, IO. *HortSci.* 17: 496.

BOOKS, THESES, REPORTS

Lougheed, E.C. (1982) “CA storage recommendation for apples.” *Fruit production recommendations.* OMAF Publication 360. pp. 68-69.

Lougheed, E.C. (1982) “Scald control of apples.” *Fruit production recommendations.* OMAF Publication 360. pp. 67-68.

Proctor, J.T.A., W.J. Blackburn, T.J. Gillespie and B.H. MacNeill. (1982) *Prediction of apple scab ascospore development for fungicide spray management.* Final Rpt. to OMAF. 91 pp.

PRESENTATIONS

Blackburn, W.J., J.T.A. Proctor and J.M. Bodnar (1982) Determination of the effects of the spotted tentiform leafminer on net photosynthesis of apple leaves. 16th Ann. Congr. of Can. Meteorological and Oceanography Soc. Ottawa.

Blackburn, W.J., J.T.A. Proctor and T. J.Gillespie (1982) Using degree-days to predict the occurrence of apple scab infection. 16th Ann. Congr. of Can. Meteorological and Oceanography Soc. Ottawa.

Blackburn, W.J., J.T.A. Proctor, T.J. Gillespie and B.H. MacNeill. (1982) A meteorological approach to predicting apple scab ascospore discharge. Can. Soc. Agronomy Ann. Mtg.

Evans, W.D. (1982) Improving vegetatively propagated polyploids using induced polypoid of interspecific hybrids. Intl. Symp. on New Genetical Approaches to Crop Improvement. Tandojam, Sind, Pakistan.

Lougheed, E.C. (1982) CA recommendation and disorders. CA Storage School. Guelph, June.

Lougheed, E.C. (1982) Postharvest physiology of fruits. Ann. Rpt. NE-103 USDA Reg. Proj. East Lansing, MI, June.

Lougheed, E.C. (1982) Report to Ontario Marketing Commission. Brockville, Aug.

Ornamentals

PERIODICALS

Eggens, J.L. (1982) “Influence of mowing on leaf and tiller orientation of turfgrasses.” *Can. J. Plant Sci.* 62: 979-82.

Eggens, J.L. (1982) “Overseeding amenity turf.” *The Grower.* 32:14.

Eggens, J.L. (1982) “Overseeding golf course fairways.” *Green Is Beautiful.* May. p. 7.

Eggens, J.L. (1982) “Thatch control on putting greens.” *Greenmaster.* p. 8.

Eggens, J.L. and D.P. Ormrod. (1982) “Creeping bentgrass, Kentucky bluegrass and annual bluegrass seed germination response to elevated temperature.” *HortSci.* 17: 624-5.

Elkiey, T., D.P. Ormrod and B.A. Marie. (1982) “Foliar sortion of sulfur dioxide, nitrogen dioxide, and ozone by ornamental woody plants.” *HortSci.* 7: 358-60.

Harney, P.M. (1982) “Tissue culture propagation of garden roses.” *The Grower.* Nov. p. 14.

Hughes, B.R. and M.J. Tsujita. (1982) “The effect of supplemental high pressure sodium lighting and nutrition on vegetative growth and flowering of ‘White Marble’ and ‘Improved Mefo’ cut chrysanthemums.” *Amer. J. Hort. Sci.* 107: 1019-24.

Legge, R.L., J.E. Thompson, D.P. Murr and M.J. Tsujita. (1982) “Sequential changes in lipid fluidity and phase properties of microsomal membranes from senescing rose petals.” *J. Exp. Bot.* 33: 303-12.

Lumis, G.P. (1982) “Guelph update.” *Nursery, Landscape Turf News.* 9(3): 1-2.

Lumis, G.P. (1982) “Stimulating root regeneration of landscape-size red oak with auxin root sprays.” *J. Arobriculture.* 8: 325-6.

Lumis, G.P. and A.G. Johnston. (1982) “Limestone or dolomite: Are they needed for containers?” *Landscape Ont.* 10(5): 9,24.

Lumis, G.P. and A.G. Johnson. (1982) “Micronutrients for containers.” *Landscape Ont.* 10(4): 10.

Lumis, G.P. and A.G. Johnson. (1982) “Which fertilizer for containers, water soluble or incorporated slow release?” *Landscape Ont.* 10(3): 24-25, 27.

Rey, F. and M.J. Tsujita. (1982) “The effects of high intensity supplemental irradiation on copper uptake in ‘Samantha’ roses.” *Roses, Inc. Bull.* Oct. pp. 59-61.

Sheard, R.W. (1982) “Late fall turf fertilization: nitrogen or potassium.” *Highlights Agric. Res. Ont.* 5(2): 7-9.

Tsujita, M.J. (1982) “Flower cutting practices for greenhouse roses receiving supplemental irradiation.” *HortSci.* 17: 44-45.

Tsujita, M.J. (1982) “Supplemental HPS lighting and icronutrient stress in greenhouse roses.” *Roses, Inc. Bull.* Oct. pp. 56-68.

Tsujita, M.J. (1982) “Supplementary lighting and micronutrient stress in greenhouse roses.” *Roses Inc. Bull.* Oct. pp. 56-58.

Tsujita, M.J., B. Grodzinski and R. Dutton. (1982) “Gerbera response to carbon dioxide and supplementary lighting.” *Can. Florist.* 77: 39-40.

Tsujita, M.J., D.P. Ormrod and W.E. Craig. (1982) “Encouraging results achieved with soil heating.” *Flowers Canada News.* Jan. p. 7.

PROCEEDINGS

Eng, R.Y.N., M.J. Tsujita and B. Grodzinski. (1982) “Diurnal carbon dioxide enrichment of chrysanthemums under high pressure sodium lighting.” *Proc. Can. Soc. Hort. Sci.* USC, Vancouver, B.C., July. p. 21.

BOOKS, THESES, REPORTS

Eng, R.Y.N. (1982) Diurnal carbon dioxide enrichment of chrysanthemums under supplementary high pressure sodium lighting. M.Sc. Thesis. Univ. of Guelph.

Harney, P.M. (1982) “Tissue culture propagation of some herbaceous horticultural plants.” *Appliation of Plant Cell and Tissue Culture to Agriculture and Industry.* Eds. D.T. Tomes, B.E. Ellis, P.M. Harney, K.J. Kasha and R.L. Peterson. Univ. of Guelph.

Hildebrandt, V. (1982) *In vitro propagation of Syringa vulgaris L.* M.Sc. Thesis. Univ. of Guelph, Mar.

McCollum, N.E. and J.L. Eggens. (1982) *Turfgrass cultivar evaluations.* Hort. Sci. Rpt.

Tomes, D.T., B.E. Ellis, P.M. Harney, K.J. Kasha and R.L. Peterson. (1982) *Application of Plant Cell and Tissue Culture to Agriculture and Industry.* Univ. of Guelph.

PRESENTATIONS

Eggens, J.L. (1982) Nutrition and stress tolerance. 33rd Can. Turfgrass Conf. Toronto, Mar.

Lumis, G.P. (1982) Research update. Landscape Ont. Growers' Day. Guelph, Dec.

Prager, C.M. and G.P. Lumis. (1982) Stimulating root regeneration of transplanted trees. Intl. Soc. Arboriculture Ann. Mtg. Louisville, KY. July.

AUDIO VISUAL

Lumis, G.P. (1982) Growing in containers. CFRB radio. Toronto, June.

Agricultural Residue Management

PERIODICALS

Irwin, D., R.E. Subden, A.G. Meiering, J.D. Cunningham and C.A. Fyfe. (1982) “An integrative approach to the electrophoreses of the reductase and dehydrogenase isozymes in respiring and fermenting yeasts.” *Microbios.* 33: 111-18.

Meiering, A.G., R.E. Subden and C.L. Pen. (1982) "Mikroprozessorsteuerung der Aethanolgaerung." *Grundl. Landtechnik*. 32(4): 124-30.

Subden, R.E., D. Irwin, J.D. Cunningham and A.G. Meiering. (1982) "Wine yeast isozymes I: Genetic differences in eighteen stock cultures." *Can. J. Microbiol.* 28: 1047-50.

Subden, R.E., W.L. Lin, A. Lautensach and A.G. Meiering. (1982) "An L-lactic acid-dehydrogenase based method for detecting microbial colonies performing malo-lactic fermentation." *Can. J. Microbiol.* 28: 883-86.

PROCEEDINGS

Meiering, A.G. (1982) "Engineering reserch for wine productions." (Abstr.) *Rpt. Ont. Hort. Crops Res. Comm.: Grape and Wine Res. Comm.* Vineland Stn.

PRESENTATIONS

Meiering, A.G., R.E. Subden and C.L. Pen. (1982) Microprocessor control of wine fermentation. Can. Soc. Enol. Paper. Jordan Stn.

Farm Buildings and Installations

PERIODICALS

Jofriet, J.C. and A.H. Singleton. (1982) "Tilt-up precast concrete sandwich panels for farm buildings." *IFIP.* Agdex No. 714.

Mittal, G.S. and L. Otten. (1982) "Simulation of low-temperature corn drying." *Can. Agric. Engng.* 24(2): 111-18.

Otten, L. and R.B. Brown. (1982) "Low-temperature and combination corn drying in Ontario." *Can. Agric. Engng.* 24(1): 51-55.

PROCEEDINGS

Otten, L., G.S. Mittal and R.B. Brown. (1982) "Experimental performance of two air type solar heated farm buildings in Southern Ontario." *Proc. Energex 82.* Univ. of Regina, Sas.,. Aug. pp. 676-81.

BOOKS, THESES, REPORTS

Otten, L., G. Mittal and R. Brown. (1982) *Fuel conservation in grain drying - phase IV.* Rpt. to OMAF/OME and OPPMB. Mar.

Otten, L., R. Brown and G. Mittal. (1982) *Renewable energy applications - solar phase V.* Rpt. to OMAF/OME and OPPMB. Mar.

PRESENTATIONS

Brown, R.B. (1982) Grain storage and aeration. Soil and Crop Day, East Central Farm Conf. Lindsay, Jan.

Brown, R.B. (1982) Solar energy application to farm buildings. OAC Agric. Conf. Jan.

Mittal, G.S., L. Otten and R.B. Brown. (1982) Characteristics and performance of a microcomputer controlled low-temperature corn drying system. 62nd AIC Conf., CSAE. UBC, Vancouver, B.C., July.

Mittal, G.S., L. Otten and R.B. Brown. (1982) Evaluating the performance of solar heated farm buildings. ASAE Winter Mtg. Chicago, Il, Dec.

Mittal, G.S., L. Otten and R.B. Brown. (1982) Theoretical and experimental analysis of the performance of solar-heated farm buildings. ASAE Summer Mtg. Madison, WI, June.

AUDIO VISUAL

Brown, R.B. (1982) Solar energy application to farm buildings. Display and presentation, Energy Days, Ont. Agric. Museum. Milton, July.

Crop Mechanization

PERIODICALS

Sankat, C.K. and W.K. Bilanski. (1982) "Thermo-ammoniation of maize stover." *Tropical Agric.* 59(1) 62-63.

Srivastava, A.C., W.K. Bilanski and P. White. (1982) "High temperature flame drying of freshly harvested peanut pods." *Agric. Mech. Asia, Africa, Lat. Amer.* 13(4): 53-57.

Vyn, T.J., T.B. Daynard, J.W. Ketcheson and J.H. Lee. (1982) "Progress in tillage research." *IFIP. Apr.*

BOOKS, THESES, REPORTS

Nwokledi,C.I. (1982) *The effect of the moldboard plow, the chisel and a simple blade on soil physical properties.* M.Sc. Thesis. Univ. of Guelph, June.

Weeds

PERIODICALS

Alex, J.F. (1982) "Survival of insects released for biocontrol of tansy ragwort, and spurges in Ontario." (Abstr.) *Exp. Comm. on Weeds Res. Rpt.: East. Sect.* p. 543.

Alex, J.F. and P. Brisson. (1982) "Nodding thistle and Scotch thistle reappear in a new alfalfa-timothy hay field." (Abstr.) *Exp. Comm. on Weeds Res. Rpt.: East. Sect.* p. 518.

Ali, A. and V. Souza Machado. (1982) "Use of gibberellic acid to hasten flowering in rutabaga (Brassica napus ssp. rapifera (METZG) SINSK.)." *Can. J. Plant Sci.* 62: 823-26.

Anderson, G.W. (1982) "Herbicide trials for control of loose-silky bentgrass in winter wheat." *Exp. Comm. on Weeds Res. Rpt.: East. Sect.* p. 9.

Anderson, G.W. (1982) "Herbicide trials on corn at Elora, Ontario - 1981" *Exp. Comm. on Weeds Res. Rpt.: East. Sect.* pp. 72-76.

Anderson, G.W. (1982) "Herbicides for oats and barley at Elora - 1982." *Exp. Comm. on Weeds Res. Rpt.: East. Sect.* pp. 2-4.

Anderson, G.W. (1982) "Horsetail control in barley." *Exp. Comm. on Weeds Res. Rpt.: East. Sect.* p. 450.

Anderson, G.W. (1982) "Post-emergence annual grass control in alfalfa, birdsfoot trefoil and red clover." *Exp. Comm. on Weeds Res. Rpt.: East. Sect.* pp. 47-48.

Anderson, G.W. and C.G. Waywell. (1982) "Weed sprayer calibration." *OMAF Factsheet.* Order No. 82-055.

Darlington, A. and C.M. Switzer. (1982) "Combinations of mefluidide and herbicides on turf." (Abstr.) *Exp. Comm. on Weeds Res. Rpt.: East. Sect.* p. 414.

Darlington, A. and C.M. Switzer. (1982) "Control of broad-leaved weeds in turf." (Abstr.) *Exp. Comm. on Weeds Res. Rpt.: East. Sect.* p. 409.

Darlington, A. and C.M. Switzer. (1982) "Control of crabgrass in established turf." (Abstr.) *Exp. Comm. on Weeds Res. Rpt.: East. Sect.* p. 413.

Darlington, A. and C.M. Switzer. (1982) "Control of Veronica filiformis Sm in turf." (Abstr.) *Exp. Comm. on Weeds Res. Rpt.: East. Sect.* p. 412.

Darlington, A. and C.M. Switzer. (1982) "Crabgrass control at the time of overseeding." (Abstr.) *Exp. Comm. on Weeds Res. Rpt.: East. Sect.* p. 413.

Darlington, A. and C.M. Switzer. (1982) "Effects of different formulations of growth regulators on turf." (Abstr.) *Exp. Comm. on Weeds Res. Rpt.: East. Sect.* p. 414.

Darlington, A. and C.M. Switzer. (1982) "Turf tolerance to Endothal #273." (Abstr.) *Exp. Comm. on Weeds Res. Rpt.: East. Sect.* p. 412.

Dekker, J.H. (1982) "Annual weed control in soybean with several tank-mixed, postemergence applied, herbicide combinations." (Abstr.) *Exp. Comm. on Weeds Res. Rpt.: East. Sect.* pp. 171-72.

Dekker, J.H. (1982) "Annual weed control in spring canola." (Abstr.) *Exp. Comm. on Weeds Res. Rpt.: East. Sect.* p. 291.

Dekker, J.H. (1982) "Annual weed control in triazine resistant spring canola." (Abstr.) *Exp. Comm. on Weeds Res. Rpt.: East. Sect.* pp. 285-6.

Dekker, J.H. (1982) "Annual weed control in triazine tolerant spring canola." *Exp. Comm. on Weeds Res. Rpt.: East. Sect.* p. 287.

Dekker, J.H. (1982) "Effect of three different tillage programs on quackgrass control in soybeans from several postemergence applied herbicides." *Exp. Comm. on Weeds Res. Rpt.: East. Sect.* pp. 167-68.

Dekker, J.H. (1982) "Efficacy of very low rates of postemergence applied herbicides in quackgrass in soybean." *Exp. Comm. on Weeds Res. Rpt.: East. Sect.* p. 166.

Dekker, J.H. (1982) "Evaluation of winter wheat crop injury from soil residues (carryover of several herbicides applied in the previous growing season." *Exp. Comm. on Weeds Res. Rpt.: East. Sect.* pp. 283-84.

Dekker, J.H. (1982) "Evaluation of winter wheat crop injury from soil residues (carryover of several herbicides applied in the previous growing season." *North Central Weed Control Conf. Res. Rpt.* pp. 94-95.

Dekker, J.H. (1982) "Evaluations of postemergence applied herbicides on quackgrass in soybean." *Exp. Comm. on Weeds Res. Rpt.: East. Sect.* pp. 169-70.

Dekker, J.H. (1982) "Field trial summary: Triazine tolerant rapeseed." *Exp. Comm. on Weeds Res. Rpt.: East. Sect.* pp. 279-88.

Dekker, J.H. (1982) "Herbicide evaluations on canola." *Exp. Comm. on Weeds Res. Rpt.: East. Sect.* p. 290.

Dekker, J.H. (1982) "Herbicide evaluations on triazine resistant canola." *Exp. Comm. on Weeds Res. Rpt.: East. Sect.* pp. 280-82.

Dekker, J.H. (1982) "Proso millet control in corn." *Exp. Comm. on Weeds Res. Rpt.: East. Sect.* p. 101.

Dekker, J.H. (1982) "Quackgrass control in triazine resistant canola." *Exp. Comm. on Weeds Res. Rpt.: East. Sect.* p. 288.

Dekker, J.H. (1982) "Quackgrass control in triazine resistant spring canola." *Exp. Comm. on Weeds Res. Rpt.: East. Sect.* p. 289.

Dekker, J.H. (1982) "Volunteer triazine resistant rapeseed control in corn." *Exp. Comm. on Weeds Res. Rpt.: East. Sect.* p. 102.

Dekker, J.H. (1982) "Volunteer triazine resistant rapeseed control in soybean." *Exp. Comm. on Weeds Res. Rpt.: East. Sect.* p. 170.

Dekker, J.H. (1982) "Volunteer triazine resistant rapeseed control in soybean." *North Central Weed Control Conf. Res. Rpt.* p. 114.

Dekker, J.H. (1982) "Volunteer triazine resistant rapeseed control in spring planted wheat." *Exp. Comm. on Weeds Res. Rpt.: East. Sect.* p. 5.

Dekker, J.H. (1982) "Weed control in spring canola." *Exp. Comm. on Weeds Res. Rpt.: East. Sect.* pp. 289-91.

Dekker, J.H. and J. Omelian. (1982) "Efficacy of several herbicides on winter rye, bare soil and winter sheat cover crops proceeding no-till corn." *Exp. Comm. on Weeds Res. Rpt.: East. Sect.* pp. 103-5.

Mapplebeck, L.R., V. Souza Machado and B. Grodzinski. (1982) "Seed germination and seedling growth characteristics of atrazine susceptible and resistant biotypes of Brassica campestris." *Can. J. Plant Sci.* 62: 733-39.

Parsons, I. and G.R. Stephenson. (1982) "Chemical brush control." (Abstr.) *Exp. Comm. on Weeds Res. Rpt.: East. Sect.* p. 444.

Sikkema, P.H. and J.H. Dekker. (1982) "Monitoring of critical weed induced stress periods in soybeans with infrared thermometry." *Exp. Comm. on Weeds Res. Rpt.: East. Sect.* p. 504.

Souza Machado, V. and J.D. Bandeen. (1982) "Genetic analysis of chloroplast atrazine resistance in Brassica campestris - Cytoplasmic inheritance." *Weed Sci.* 30: 281-85.

Souza Machado, V. and C. Ditto. (1982) "Tomato chloroplast photochemical sensitivity to metribuzin." *Sci. Hort.* 17: 9-13.

Souza Machado, V., S.C. Phatak and I.L. Nonnecke. (1982) "Inheritance of tolerance of the tomato (Lycopersicon esculentum) to metribuzin herbicide." *Euphytica.* 31: 129-38.

Stephenson, G.R. (1982) "Weeds and brush in non-crop land." (Abstr.) *Exp. Comm. on Weeds Res. Rpt.: East. Sect.* p. 433.

PROCEEDINGS

Souza Machado, V. (1982) "Inheritance and breeding potential of herbicide resistant weeds." *Proc. N.E. Weed Control Conf.* New York, N.Y., Jan.

Souza Machado, V., A. Ali and W. Keller. (1982) "Breeding herbicide resistance into rutabaga." *Proc. 21st Intl. Hort. Congr., Vol. I.* Hamburg, Aug. p. 1418.

Stephenson, G.R. (1982) "The emergence and distribution of triazine resistant weed biotypes in North America." *Proc. North East Weed Sci. Soc.* New York, N.Y., Jan. pp. 75-81.

Stephenson, G.R., A. Ali and F.M. Ashton. (1982) "Influence of antidotes and herbicides on glutathione (GSH) content in maize seedlings." *Proc. Fifth Intl. Congr. of Pesticide Chemistry.* Kyoto, Japan, Aug.

Stephenson, G.R. and G. Ezra. (1982) "The mode of action of herbicide safeners." *Proc. Br. Crop Protection Conf., II.* Brighton, England. pp. 451-59.

BOOKS, THESES, REPORTS

Alex, J.F., C.G. Waywell and C.M. Switzer. (1982) *Weed control in lawns and gardens.* (Rev.) OMAF Publication 529.

Alex, J.F., P. Brisson and K. Smereka. (1982) "Smut of fall panicum and related grasses." (Abstr.) *An Assessment of Pesticide Research Projects Funded by the Ministry of the Environment through the Ontario Pesticides Advisory Committee 1981-82.* OME. pp. 17-18.

Souza Machado, V. (1982) "Inheritance and breeding potential of herbicide tolerance/resistance in plants." *Herbicide Resistance in Plants.* Ed. H.M. LeBaron and J. Gressel. New York: J. Wiley & Sons. pp. 257-73.

Switzer, C.M. and Ont. Weed Comm. (1982) *Guide to chemical weed control.* (Rev.) OMAF Publication 75.

PRESENTATIONS

Alex, J.F. and R.D. McLaren. (1982) Triazine resistance: The occurrence and incurease in resistance among Ontario weed species previously susceptible to triazine herbicides. (Poster) Exp. Comm. on Weeds: East. Sect. Ann. Mtg. Montreal, Que., Oct.

Switzer, C.M. (1982) Crabgrass control. MOE 8th Ann. Pesticide Symp. Toronto, Mar.

Switzer, C.M. (1982) International Turfgrass Society, IVth Conference and Tours. 20th North Carolina Turfgrass Conf. Raleigh, N.C., Jan.

Switzer, C.M. (1982) Looking ahead in horticulture. Ont. Hort. Assn. Ann. Conf. Univ. of Guelph, June.

Switzer, C.M. (1982) The future of the North American turfgrass industry. 20th North Carolina Turfgrass Conf. Raleigh, N.C., Jan.

Switzer, C.M. (1982) The role of 2,4-D in agriculture. Ont. Golf Superintendent's Symp. Univ. of Guelph, Jan.

Insects

PERIODICALS

Attwater, W. and R.T. Wukasch. (1982) "Anthracnose diseases on ornamentals." *Pest Diagnostic and Advisory Clinic Circular.* July.

Ellis, C.R. and D.G. Harcourt. (1982) "Biological control of the alfalfa weevil." *IFIP.* May.

Ellis, C.R. and S.M. Smith. (1982) "Insects on regrowth alfalfa in Ontario." *IFIP.* May.

Ellis, C.R., Y.D. Deedat and K. Bereza. (1982) "Potato stem borer in Ontario." *OMAF Factsheet.* Mar.

Goble, H.W. (1982) "Apple maggot in the home garden." *Pest Diagnostic and Advisory Clinic Circular.* (rev.)

Goble, H.W. (1982) "Black vine weevils and strawberry root weevils as pests in the house." *Pest Diagnostic and Advisory Clinic Circular.* (rev.) Nov.

Goble, H.W. (1982) "Control of aphids in home gardens." *Pest Diagnostic and Advisory Clinic Circular.* (rev.) July.

Goble, H.W. (1982) "House centipede." *Pest Diagnostic and Advisory Clinic Circular.* (rev.) Dec.

Goble, H.W. (1982) "Rose chafer." *Pest Diagnostic and Advisory Clinic Circular.* (rev.)

Goble, H.W. (1982) "Spruce budworm." *Pest Diagnostic and Advisory Clinic Circular.* (rev.)

Goble, H.W. and W.C. Allan. (1982) "Spruce gall aphid." *Pest Diagnostic and Advisory Clinic Circular.* (to be rev.)

Hunt, E.C. and G.A. Surgeoner. (1982) "Control for lice and northern fowl mites." *IFIP.* Oct.

Kelly, C.B. (1982) "Black knot of plum and cherry." *Pest Diagnostic and Advisory Clinic Circular.* (rev.)

Kelly, C.B. (1982) "Leaf scorch and leaf blotch of horse-chestnut trees." *Pest Diagnostic and Advisory Clinic Circular.* (rev.) June.

Kelly, C.B. (1982) "Plum pockets." *Pest Diagnostic and Advisory Clinic Circular.* (rev.)

Kelly, C.B. (1982) "Tar spot of maple." *Pest Diagnostic and Advisory Clinic Circular.* (rev.) June.

Shuel, R.W. and S.E. Dixon. (1982) "A possible role of 10-hydroxydecenoic acid in the sterol nutrition of one larval honeybee." *J. Apic. Res.* 21: 115-21.

Surgeoner, G.A. (1982) "New product (Ectiban (R)) approved for control of biting flies, lice and northern fowl mites." *IFIP.* Sept.

Wukasch, R.T. (1982) "Anthracnose disease fungi hitting Forest City forest." *The London Free Press.* Aug. 19.

Wukasch, R.T. (1982) "Aphids on maples." *Acton Free Press.* July 15.

Wukasch, R.T. (1982) "Detergent helps battle the beer bugs."*Guelph Mercury.* Aug. 16.

Wukasch, R.T. (1982) "Diseases of asparagus." *OMAF Factsheet.* June.

Wukasch, R.T. (1982) "Insect pests of asparagus." *OMAF Factsheet.* June.

Wukasch, R.T. (1982) "Plant bugs on asparagus." *Cash Crop Farming.* 43(5): 14. May.

Wukasch, R.T. (1982) "Plan strategy now to battle insect pests." *Guelph This Week.* May 12. p. 18.

Wukasch, R.T. (1982) "Sap beetles." *Pest Diagnostic and Advisory Clinic Circular.* July.

Wukasch, R.T. (1982) "The Pest Diagnostic and Advisory Clinic." *Agripress.* Dec.

Wukasch, R.T. (1982) "The summer war of '82." *Sunday Star.* July 25. A10.

PROCEEDINGS

Wukasch, R.T. (1982) "Insects and diseases of asparagus." *Proc. Ont. Hort. Conf.* Toronto, Feb. pp. 158-59.

BOOKS, THESES, REPORTS

Rodrigues, C.S. (1982) *Effects of insecticides including insect growth regulators on black fly (Diptera: Simuliidae) larvae and associated nontarget stream invertebrates.* Ph.D. Thesis. Univ. of Guelph, Aug.

Sturgeoner, G.A. (1982) *Efficacy of fenvalerate for control of cattle lice.* Shell Chemical Ltd. Toronto, May.

Wukasch, R.T. (1982) *Beat garden pests with biocontrols.* Spring '82 gardening kit - Grow Ontario. Apr.

Wukasch, R.T. (1982) *Many plant problems linked to stress conditions.* Spring '82 gardening kit - Grow Ontario. Apr.

Wukasch, R.T. (1982) *Plan strategies now to battle garden insect pests.* Spring '82 gardening kit - Grow Ontario. Apr.

PRESENTATIONS

Kelly, C.B. (1982) Insects and diseases. St. James United Church "Green Thumb." Waterdown, Apr.

MacDonald, R.S., G.A. Surgeoner, K.R. Solomon and C.R. Harris. (1982) Field studies on the effect of alternating sprays on resistance to permethrin and dichlorvos in the housefly. Joint Mtgs. of the Entomol. Soc. Amer., Can. and Ont. Toronto, Nov./Dec.

Rodrigues, C.S., N.K. Kaushik and D. Molloy. (1982) Field trials with diflubenzuron against blackfly larvae and its impact on nontarget stream organisms. Joint Mtgs. of the Entomol. Soc. Amer., Can. and Ont. Toronto, Nov./Dec.

Solomon, K.R. (1982) Pyrethroid resistance in Ontario houseflies. ICI Entomol. Sect. Jeallott's Hill, Jan.

Surgeoner, G.A. (1982) Ectoparasite control on beef cattle: The future. Beef Day Mtg. Guelph, Oct.
Beef Day Mtg. Guelph, Oct.

Surgeoner, G.A. (1982) Fly and louse control on dairy cattle. OVC Herd Health Mtg. Guelph, Nov.

Surgeoner, G.A. (1982) New products for control of ectoparasites on poultry. Ont. Academy of Poult. Med. Mtg. Guelph, Dec.

Wukasch, R.T. (1982) Alternative methods of insect control. Learning Seekers. Mono Centre, Nov.

Wukasch, R.T. (1982) Ecological consideration in land use and environmental protection. Land Resources and Environmental Qual. Univ. of Guelph, Oct.

Wukasch, R.T. (1982) "Insects and diseases of turf in athletic fields. Panel discussion "Green Side Up '82." Univ. of Guelph, Apr.

Wukasch, R.T. (1982) Pest control course. Can. Forces Medical Serv. School, CFB Borden. Univ. of Guelph, July.

Wukasch, R.T. (1982) Structural pests. Preventive Medicine Officers, CFB Borden. Univ. of Guelph, May.

AUDIO VISUAL

Wukasch, R.T. (1982) Giant hogweed. "Ontario Morning," CBC Radio. Toronto, July.

Wukasch, R.T. (1982) Sap beetles. CJOY Radio News. Guelph, July.

Plant Diseases

PERIODICALS

Bailey, K.L. and B.H. MacNeill. (1982) "Survey of powdery mildew populations on winter wheat in southern Ontario." *Can. J. Plant Pathol.* 4:303.

Boland, G.J. and R. Hall. (1982) "Effect of numbers of apothecia of Sclerotinia sclerotiorum on white mold of white beans." *Ann. Rpt. Bean Imp. Coop.* 25: 62-63.

Boland, G.J. and R. Hall. (1982) "White mold of soybeans." *Can. J. Plant Pathol.* 4: 304.

Busch, L.V. and B.R. Christie. (1982) "Combating Verticillium wilt of alfalfa." *Highlights Agric. Res. Ont.* 5(1): 4-6.

Busch, L.V. and E.A. Smith. (1982) "Reaction of a number of cultivated plants and weed species to an alfalfa isolate of Verticillium albo-atrum." *Can. J. Plant Pathol.* 4: 266-68.

Hildebrand, P.D. and J.C. Sutton. (1982) "Weather variables in relation to an epidemic of onion downy mildew." *Phytopathol.* 72: 1952-56.

Leach, C.M., P.D. Hildebrand and J.C. Sutton. (1982) "Sporangium discharge by Peronospora destructor: Influence of humidity, red-infrared radiation, and vibration." *Phytopathol.* 72: 1952-56.

Morton, J.G. and R. Hall. (1982) "Effect of spray timing on white mold and seed yield of white bean." *Ann. Rpt. Bean Imp. Coop.* 25:60-62.

Morton, J.G. and R. Hall. (1982) "Timing of Benlate sprays for control of white mold of white bean." *Can. J. Plant Pathol.* 4: 308-9.

Robb, E.J., A. Smith and L. Busch. (1982) "Wilts caused by Verticillium species. A cytological survey of vascular alterations in leaves." *Can. J. Bot.* 60: 825-37.

Robb, E.J. and G.L. Barron. (1982) "Nature's ballistic missile." *Sci.* 218: 1221-22.

Robb, E.J. and L.V. Busch. (1982) "Vetrastructural changes in drought-induced wilt: A comparison with pathogen-induced flascidity." *Can. J. Plant Pathol.*4: 97-105.

Sippell, D.W. And R. Hall. (1982) "Effects of Fusarium solani phaseoli, Pythium ultimum, and F. oxysporum on yield components of white bean." *Can. J. Plant Pathol.* 4: 54-58.

Sippell, D.W. and R. Hall. (1982) "Effects of pathogen species, inoculum concentration, temperature, and soil moisture on bean root rot and plant growth." *Can. J. Plant Pathol.* 4: 1-7.

Sutton, J.C. and R. Procter. (1982) "Dispersion analysis of gibberella ear rot in maize." *Can. J. Plant Pathol.* 4: 254-58.

Sutton, J.C. (1982) "Epidemiology of wheat head blight and maize ear rot caused by Fusarium graminearum." *Can. J. Plant Pathol.* 4:195-209.

Sutton, J.C. (1982) "Head diseases of winter wheat." *OMAF Factsheet.* Nov.

PROCEEDINGS

Attwater, W.A. and L.V. Busch. (1982) "The role of sap beetles (Glischrochilus quadrisignatus (Say)) in the epidemiology of Gibberella corn ear rot." (Abstr.) *Can. Phytopathol. Soc. Ann. Mtg.* Edmonton, Alta., June.

Bedford, K.E., B.H. MacNeill and W.G. Bonn. (1982) "Relation of epiphytic populations of Pseudomonas syringae pv. papulans to blister spot of Mutsu apple." (Abstr.) *Can. Phytopathol. Soc. Ann. Mtg.* Edmonton, Alta., June.

Pitblado, R. and B.H. MacNeill. (1982) "Temperature sensitivity of a gene for resistance to Pseudomonas syringae pv. tomato." (Abstr.) *Can. Phytopathol. Soc. Ann. Mtg.* Edmonton, Alta., June.

BOOKS, THESES, REPORTS

Barron, G.L. (1982) "Nematophagous fungi." *Methods in Microbial Ecology.* Eds. Bruns and Slater. Oxford: Blackwell Scientific Press. pp. 533-52.

Meteorology

PERIODICALS

Brown, D.M. and G.A. Brown. (1982) "Simulation of forage yield for crop insurance purposes in Ontario." (Abstr.) *Agron. Absts.* Amer. Soc. Agron. p. 11.

Agriculture and Water Quality

PERIODICALS

Sharom, M.S. and K.R. Solomon. (1982) "The influence of adsorption on glass, pH and temperature on the disappearance of permethrin in aqueous systems." *Environ. Pollution B.* 4: 269-79.

Solomon, K.R., K. Smith and G.L. Stephenson. (1982) "Depth integrating samplers for use in limnocorrals." *Hydrobiologia.* 94:71-75.

PROCEEDINGS

Pall, R., W.T. Dickinson, D. Green and R. McGirr. (1982) "Impacts of soil characteristics on soil erodibility." *Proc. 1st Sci. Gen. Assem. Intl. Assn. Hydrol. Sci.* Exeter, U.K., July. pp. 39-45.

BOOKS, THESES, REPORTS

Bird, G.A. (1982) *The processing of leaf litter by the invertebrates in three reaches of a stream and in the laboratory.* Ph.D. Thesis. Univ. of Guelph, Dec.

Dickinson, W.T. (1982) *Identification and control of soil erosion and fluvial sedimentation in selected basins of the Thames River Watershed.* Tech. Rpt. to the Stratford/Avon Env. Mgmt. Project and the Thames River Implementation Comm. Aug.

Green, D.R. (1982) *Soil moisture effects on soil erosion indices of stability and strength.* M.Sc. Thesis. Univ. of Guelph, Mar.

PRESENTATIONS

Bird, G.A., N.K. Kaushik and J.B. Robinson. (1982) The effect of agriculture (deforestation) on leaf processing in a southern Ontario stream. Ann. Mtg. North Amer. Benthological Soc. Ann Arbor, MI, Apr.

Dickinson, W.T., R. Pall and G.J. Wall. (1982) Seasonal variations in soil erodibility. Amer. Soc. Agric. Eng. Winter Mtg. Chicago, IL, Dec.

Pall, R., W.T. Dickinson and R. McGirr. (1982) Climatic and soil conditions significant to soil erosion in Southern Ontario. Amer. Soc. Agric. Eng. North Atlantic Reg. Ann. Conf. Burlington, VT, Aug.

Singer, S.N., J. Arnold, W.T. Dickinson, A.F. Smith and S.K. So. (1982) Rural runoff pollution and control options. OMOE Technol. Transfer Conf. Toronto, Dec.

Solomon, K.R. (1982) The use of limnocorrals for evaluating the effects of pesticides in the aquatic environment. Environ. Chem. Sect., ICI. Jeallott's Hill, Jan.

Solomon, K.R. (1982) The use of limnocorrals for the evaluation of the effects of pesticides in the aquatic ecosystem. Dept. of Toxicol. and Entomol. Univ. of Calif. Riverside, CA, Nov.

Solomon, K.R. and J.Y. Yoo. (1982) Persistence and distribution of methoxychlor in an aquatic enclosure. Aquatic Toxicity Workshop. Edmonton, Alta., Nov.

Solomon, K.R., P. Hamilton, N.K. Kaushik, J.B. Robinson, K.E. Smith and G.L. Stephenson. (1982) A method for evaluating the impact of pesticides in aquatic systems. Joint Mtgs. Entomol. Soc. Amer., Can. and Ont. Toronto, Nov./Dec.

Stephenson, G.L., N.K. Kaushik, K.E. Smith and K.R. Solomon. (1982) An evaluation of pesticides in aquatic systems. Joint Mtgs. Entomol. Soc. Amer., Can. and Ont. Toronto, Nov./Dec.

Yoo, J.Y. and K.R. Solomon. (1982) Persistence and distribution of methoxychlor in natural lake water. Joint Mtgs. Entomol. Soc. Amer., Can. and Ont. Toronto, Nov./Dec.

Agricultural Land Use

PERIODICALS

Dyer, A.G., B.E. Smit, M.J. Brklacich and R.S. Rodd. (1982) "A land evaluation model (LEM): Concept, design and application." *Computers, Environ. and Urban Systems.* 7: 367-76.

Flaherty, M.S. and B.E. Smit. (1982) "An assessment of land classification techniques in planning for agricultural land use." *J. Environ. Mgmt.* 15: 323-32.

Gray, E.C. and B.E. Prentice. (1982) "Agricultural land prices: The effect of the terms of a sale." *Can. J. Agric. Ec.* 30(2): 175-86.

Mage, J.A. (1982) "The geography of part-time farming - a new vista for agricultural geographers." *Geo-J.* 6(4): 301-13.

Mage, J.A. and M. Lapping. (1982) "Legislation related to absentee foreign land ownership in Canada." *Agric. Law J.* 4: 364-89.

Mage, J.A. and T. Johnston. (1982) "Agricultural land use policy in Ontario: A response to perceived crises?" *Appl. Geog.* 5: 101-13.

Moss, M.R. and S. Davis. (1982) "The potential and actual primary productivity of southern Ontario's agro-ecosystem." *Appl. Geog.* 2: 17-38.

Smit, B.E. (1982) "A land evaluation methodology for broadscale land use assessment and planning in Canada." *Land Use Modelling Qtly.* 4: 18-27.

Smit, B.E. and R.S. Rodd. (1982) "Rural land evaluation: a recent Canadian advance." *Interdisciplinary Sci. Rev.* 7(3): 167-69.

van Vuuren, W. and G.W. Lentz. (1982) "Farm property assessment and taxation in Ontario." *Assessors Rev.* pp. 11-16.

PROCEEDINGS

Cocklin, C., M. Brklacich, A. Dyer and B. Smit. (1982) "The impact of future urban expansion on land needs for agriculture in Ontario." (Abstr. *Can. Assn. Geogrs. Ann. Mtg.* Ottawa, May.

Mage, J.A. (1982) "Absentee foreign ownership of farmland - an Ontario example." (Abstr.) *Amer. Assn. Geogrs. Ann. Mtg.* San Antonio, TX, Apr. pp. 305-6.

Mage, J.A. (1982) "Absentee foreign ownership of farmland - trends, problems and issues with specific reference to Huron-South Bruce Counties, Ontario." *Proc. GIRMS.* 12, 1981-82: 1-18.

BOOKS, THESES, REPORTS

Gray, E.C. and B.E. Prentice. (1982) *Factors affecting farm real estate prices in central Wellington County (Ontario).* AEEE/82/6. May.

Smit, B.E. (1982) *Land Evaluation Project: Conditions affecting the evaluation of lands for agriculture in Northern and Eastern Ontario.* Rpt. No. 3/81-83. Rpt. to Land Resource Res. Inst., Res. Br., Agric. Can. Univ. Sch. Rural Planning and Development, Univ. of Guelph, Oct.

Smit, B.E. (1982) *Land Evaluation Project: Effects of alternative agricultural growth scenarios and selected supply side adjustments on future land needs for Ontario Agriculture.* Rpt. No. 7/81-83. Rpt. to Land Resource Res. Inst., Res. Br., Agric. Can. Univ. Sch. Rural Planning and Development, Univ. of Guelph, Aug.

Smit, B.E. (1982) *Land Evaluation Project: Feasibility of a national level land evaluation system.* Rpt. No. 5/81-83. Rpt. to Land Resource Res. Inst., Res. Br., Agric. Can. Univ. Sch. Rural Planning and Development, Univ. of Guelph, Dec.

Smit, B.E. (1982) *Land Evaluation Project: Land evaluation under alternative erosion control policies.* Working document. Rpt. to Land Resource Res. Inst., Res. Br., Agric. Can. Univ. Sch. Rural Planning and Development, Univ. of Guelph, Dec.

PRESENTATIONS

Mage, J.A. (1982) Absentee land ownership - What are the implications? Facing the Challenge: Ownership of Ontario Farmland Conf. Stratford, Mar.

Mage, J.A. (1982) Absentee land ownership - What is it and how does it arise? Facing the Challenge: Ownership of Ontario Farmland Conf. Stratford, Mar.

Mage, J.A. (1982) Land issues - Absentee ownership of Ontario farmland. RDOP Outreach Series 2: 2.

Mage, J.A. (1982) Land issues - How to undertake a local survey of rural land-ownership. RDOP Outreach Series 2: 8.

Mage, J.A. and T. Johnston. (1982) Agricultural land use policy in Ontario: A response to perceived crises? Appl. Geogrs. Ann. Mtg. Baltimore, MD, Sept.

Smit, B. (1982) Land management in the urban surroundings: the rationale for public policy. Geogr. Inter-Univ. Resource Mgmt. Seminar. Guelph, Nov.

van Vuuren, W. (1982) Effects of urban influence on agricultural land use. CAES Ann. Mtg. Vancouver, B.C., July.

Soil/Crop Management

PERIODICALS

Beauchamp, E.G., G.E. Kidd and G.W. Thurtell. (1982) "Ammonia volatilization from liquid dairy cattle manure in the field." *Can. J. Soil Sci.* 62: 11-19.

de St. Remy, E.A. and T.B. Daynard. (1982) "Effects of tillage methods on earthworm population in monoculture corn." *Can. J. Soil Sci.* 62: 699-703.

Friesen, D.K., A.S.R. Juo and M.H. Miller. (1982) "Residual value of lime and leaching of calcium in a kaolinitic ultisol in the high rainfall tropics." *Soil Sci. Soc. Amer. J.* 46: 1184-89.

Ketcheson, J.W., T.J. Vyn and T.B. Daynard. (1982) "Tillage practices for residue management and erosion control." *OMAF Factsheet* 82-034.

Laryea, K.B., D.E. Elrick and M.J. Robin. (1982) "Hydrodynamic dispersion involving cationic adsorption during unsaturated, transient water flow in soil." *Soil Sci. Amer. J.* 46: 667-71.

Sheppard, S.C. and T.E. Bates. (1982) "Selection of a soil extractant and a multiple regression model to predict plant available manganese." *Common Soil Sci. and Plant Anal.* 13: 1095-1113.

Vyn, T.J., T.B. Daynard and J.W. Ketcheson. (1982) "Feasibility of alternative tillage practices for reducing soil erosion in Ontario corn production." *Abstrs. Amer. Soc. Agron.* p. 258.

Vyn, T.J., T.B. Daynard, E.A. de St. Remy, J.W. Ketcheson and J.H.A. Lee. (1982) "Research on tillage." *Ann. Rpt. 1982.* Crop Sci. Dept. Univ. of Guelph. pp. 67-75.

PROCEEDINGS

Ketcheson, J.W., P.H. Groenevelt, B.D. Kay and C.P. Grant. (1982) "Effect of tillage and stover management on soil temperature." *Proc. 9th Conf. Intl. Soil Tillage Res. Org.* Osijek, Yugoslavia. June. pp. 478-83.

Vyn, T.J., T.B. Daynard and J.W. Ketcheson. (1982) "Effect of reduced tillage systems on soil physical properties and maize grain yield in Ontario." *Proc. 9th Conf. Intl. Soil Tillage Res. Org.* Osijek, Yugoslavia. June. pp. 156-61.

BOOKS, THESES, REPORTS

Nunez-Barrios, A. (1982) *Soil-plant water status and growth, development and yield of maize (Zea mays L).* M.Sc. Thesis. Univ. of Guelph, Sept.

O'Halloran, I.P. (1982) *Phosphorus absorption by corn (Zea mays L) in relation to tillage.* M.Sc. Thesis. Univ. of Guelph, Dec.

Stypa, M.L. (1982) *The relationships between corn (Zea mays L) yield and root growth under field conditions.* M.Sc. Thesis. Univ. of Guelph, Sept.

Vyn, T.J., T.B. Daynard, J.W. Ketcheson and J.H. Lee. (1982) "Modification to primary tillage implements." *Progress Rpt. 1981.* Land Resource Sci. Dept. Univ. of Guelph, July. pp. 46-47.

Vyn, T.J., T.B. Daynard, J.W. Ketcheson and J.H. Lee. (1982) "Progress in tillage research." *IFIP.* 111/156.

AUDIO VISUAL

Vyn, T.J. (1982) Interview on conservation tillage. CKNX TV. Wingham, Sept.

Food

PERIODICALS

Bansal and J.M. deMan. (1982) "Effect of hydrogenation on some physical properties of canola oil." *J. Food Sci.* 47: 2004-07.

Bansal and J.M. deMan. (1982) "Effect of hydrogenation on the chemical composition of canola oil." *J. Food Sci.* 47: 1338-44.

Bird, R.P. and H.H. Draper. (1982) "Uptake and oxidation of malonaldehyde by cultured mammalian cells." *Lipids.* 17: 519-23.

Bird, R.P., H.H. Draper and P.K. Basrur. (1982) "Effect of malonaldehyde and acetaldehyde on cultured mammalian cells. Production of micronuclei and chromosomal aberrations." *Mutation Res.* 101: 237-46.

Bird, R.P., H.H. Draper and V.E.O. Valli. (1982) "Toxicological evaluation of malonaldehyde: a 12-month study of mice." *J. Toxicol. Environ. Health.* 10: 897-905.

Collins-Thompson, D.L. and G.R. Lopez. (1982) "Control of Brochothrix thermosphacta by Lactobacillus species in vacuum-packed bologna." *Can. Inst. Food Sci. Technol. J.* 15: 307-9.

Collins-Thompson, D.L., D. Wood and M. Jones. (1982) "Factors controlling growth of gram-negative bacteria in vacuum-packed bologna." *J. Food Prot.* 45: 305-9.

deMan, J.M., Y. El-Shattory and L. deMan. (1982) "Hydrogenation of Canola oil (Tower)." *Food Chem. Microbiol. Technol.* 7: 117-24.

Hayakawa, M. and J.M. deMan. (1982) "Consistency of fractionated milkfat as measured by two penetration methods." *J. Dairy Sci.* 65: 1095-101.

Hayakawa, M. and J.M. deMan. (1982) "Interpretation of cone penetrometer consistency measurements of fats." *J. Texture Studies.* 13: 201-10.

Hill, A.R. (1982) "Concentration and fractionation of whey." *Modern Dairy.* July/Aug. p. 12.

Hill, A.R., D.H. Bullock and D.M. Irvine. (1982) "Manufacturing parameters of Queso Blanco made from milk and recombined milk." *Can. Inst. Food Sci. Technol. J.* 15: 47-53.

Hill, A.R., D.H. Bullock and D.M. Irvine. (1982) "Recovery of whey proteins from concentrated sweet whey." *Can. Inst. Food Sci. Technol. J.* 15: 180-84.

Hill, A.R., D.M. Irvine and D.H. Bullock. (1982) "Precipitation and recovery of whey protein. A review." " *Can. Inst. Food Sci. Technol. J.* p. 155-60.

Meiering, A.G. R.E. Subden and C.L. Penn. (1982) "Mikroprozessorsteuerung der Aethanolgaerung." *Grundl. Landtechnik.* 32(4) 124-30.

Myhr, A.N., D.M. Irvine and S.K. Arora. (1982) "Late gas defect in filmwrapped cheese." *XXI Intl. Dairy Congr.: Brief Communications.* 1(1): 433.

Samulski, M.A. and B.L. Walker. (1982) "Maternal dietary fat and polyunsaturated fatty acids in developing foetal rat brain." *J. Neurochem.* 39: 1163.

Scythes, C., R.S. Gibson and H.H. Draper. (1982) "Dietary calcium and phosphorus intakes of a sample of Canadian pre-menopausal women consuming self-selected diets." *Nutr. Res.* 2: 385-96.

Siu, G.M. and H.H. Draper. (1982) "Metabolism of malonaldehyde in vivo and in vitro." *Lipds.* 17: 349-55.

Siu, G.M., H.H. Draper and V.E.O. Valli. (1982) "Oral toxicity of malonaldehyde: a ninety-day study in mice." *J. Toxicol. Environ. Health.* 11: 105-19.

Subden, R.E., W.L. Lin, A. Lautensach and A.G. Meiering. (1982) "An L-lactic acid-dehydrogenase based method for detecting microbial colonies performing malo-lactic fermentation." *Can. J. Microbiol.* 28: 883-86.

Walker, B.L. (1982) "Accumulation of erucic acid in rat adrenal and ovary: a time-course study." *J. Amer. Oil Chem. Soc.* 59: 319A.

Walker, B.L., M.S. Lamptey and M.A. Samulski. (1982) "Polyunsaturated fatty acids and the developing brain." *J. Amer. Oil Chem. Soc.* 59: 2904.

Yoshida, H. and J.C. Alexander. (1982) "Fatty acid distribution in the triacyclglycerols isolated from thermally oxidized oils." *Nutr. Rpt. Intl.* 26(4): 655-65.

PROCEEDINGS

Alexander, J.C. and H. Yoshida. (1982) "Enzymatic hydrolysis of fractions from heated oils." (Abstr.) *J. Nutr.* 112(6): Append. II.

Alexander, J.C. and H. Yoshida. (1982) "Symposium on xenobiotics in foods and feeds. Biological properties of heated dietary fats." *Proc. 184th Ntl. Mtg. Amer. Chem. Soc.* Kansas City, MO, Sept. p. 36.

Gabriel, H.G., J.C. Alexander and V.E. Valli. (1982) "Residual toxic effects from heated fat after feeding fresh corn oil." (Abstr.) *J. Amer. Oil Chem. Soc.* 59(4): 299a.

Hill, A.R., D.H. Bullock and D.M. Irvine. (1982) "Manufacture of Queso Blanco cheese from recombined milk." *Proc. 21st Intl. Dairy Congr.* Moscow, USSR, July. p. 114.

Irvine, D.M., D.H. Bullock and A.R. Hill. (1982) "Recovery of lactalbumin from concentrated sweet whey." *Proc. 21st Intl. Dairy Congr.* Moscow, USSR, July. p. 643.

Irvine, D.M., D.H. Bullock and A.R. Hill. (1982) "Utilization of sweet whey lactalbumin in cheese spread." *Proc. 21st Intl. Dairy Congr.* Moscow, USSR, July. p. 491.

Meiering, A.G., R.E. Subden and C.L. Penn. (1982) "Microprocessor control of wine fermentation." (Abstr.) *Can. Soc. Oenol.* Jordan Stn.

Mulvihill, M.J. and B.L. Walker. (1982) "Interaction of dietary fatty acids and cholesterol in genetically hypercholesterolemic mice." *Proc. Can. Fed. Biol. Soc.* 25: 601.

Wilck, B.A. and B.L. Walker. (1982) "Differential responses of rat hepatic and adipose tissue lipogenic enzymes to dietary hydrogenated fats." *Proc. Can. Fed. Biol. Soc.* 25: 597.

BOOKS, THESES, REPORTS

Irvine, D.M. and A.N. Myhr. (1982) *The late gas defect in aged cheddar cheese.* Ont. Milk Mkt. Bd. Guelph, May.

Manji, B. (1982) *A comparison of the Arrhenius and TDT method for determining thermal process times.* M.Sc. Thesis. Univ. of Guelph.

Meiering, A.G. (1982) *Engineering research for wine production.* (2 Abstr.) Hort. Crops Res. Comm. Mtg. Rpt. Grape & Wine Res. Subcomm. Vineland Stn.

Rasper, V.F. (1982) "Effect of preparative procedure on the evaluation of in vitro indigestible residue (dietary fiber)." *Food Carbohydrates.* Eds. D.R. Lineback and J.E. Inglett. Westport, CN: AVI Publishing Inc. pp. 333-55.

Wright, S.A., E. Chiarello and J.D. Cunningham. (1982) "Effective utilization of distillery wastes for the production of organic compounds of industrial value." *McGuinness Distillers Ltd., NRC Rpt.* pp. 1-105.

PRESENTATIONS

deMan, J.M., E. Pogorzelska and L. deMan. (1982) Effect of the presence of sulfur during the hydrogenation of Canola oil. 73rd AOCS Ann. Mtg. Toronto, May.

Irvine, D.M. and A.N. Myhr. (1982) Results of studies of late gas production in Cheddar cheese. Central Ont. Cheesemakers Assn. Ann. Conv. Belleville, Nov.

Irvine, D.M. and A.N. Myhr. (1982) Studies of gas production in film wrapped cheese. Western Ont. Cheesemakers Assn. Tavistock, June.

Lee, S.F. and J.M. deMan. (1982) The effects of surfactants on the crystallization behaviour of hydrogenated Canola oil. 25th Ann. Conf. CIFST. Montreal, Que., June.

Myhr, A.N. (1982) New methods for assessig quality of dairy products. Univ. of Guelph Studies Cited. Intl. Dairy Congr. Moscow, USSR, July.

Rural Living

PERIODICALS

Joseph, A.E. and A. Poyner. (1982) "Interpreting patterns of public service utilization in rural areas." *Ec. Geog.* 58: 262-73.

Joseph, A.E. and P.R. Bantock. (1982) "Measuring potential physical accessibility to general practitioners in rural areas: A method and case study." *Social Sci. Med.* 16: 85-90.

Smit, B.E. and A.E. Joseph. (1982) "Trade-off analysis of preferences for public service." *Envir. and Behavior.* 14: 238-58.

PROCEEDINGS

Blackburn, D.J. (1982) "How extension stacks up as an information source for farmers." *Proc. Can. Soc. Ext. Conf.* Vancouver, B.C., July.

Dahms, F.A. (1982) "Changing functions of settlements in Huron and Southern Bruce Counties of Ontario: 1871-1981." (Abstr.) *Can. Assn. Geogrs. Ann. Mtg.* Ottawa, June. p. 29.

Dahms, F.A. (1982) "Viable agriculture - a viable rural community?" *Proc. Approaches to Rural Development.* Sch. Part-Time Studies and Cont. Educ. Univ. of Guelph. pp. 234-38.

BOOKS, THESES, REPORTS

Blackburn, D.J., G.L. Brinkman and H.C. Driver. (1982) "Understanding behavioral and economic characteristics in working with operators of small farms. *Progress in Rural Extension and Community Development.* Eds. G.E. Jones and M.J. Rolls. Chichester, England: John Wiley and Sons. pp. 171-88.

Blackburn, D.J. and J.A. Thompson. (1982) *An evaluation of the dairy feed formulation service in Ontario.* Draft Rpt. Sch. Agric. Ec. and Ext. Educ. Univ. of Guelph.

Dahms, F.A. (1982) *Changing agriculture and the 'decline' of rural settlements: another perspective.* Rpt. to Huron Co. Fed. of Agric. Stratford, Mar.

Dahms, F.A. (1982) *The changing fuctions of rural settlements in Huron and Southern Bruce Counties: Historical background and major trends, 1951-1981.* Univ. Sch. Rural Planning and Development Publication No. 110. Univ. of Guelph. 66 pp.

Joseph, A.E., B.E. Smit and K.B. Beesley. (1982) *Public input into planning for municipal service provision: A method and case study.* Studies in Rural Adjustment Rpt. No. 14. Univ. Sch. Rural Planning and Development Publication No. 111. Univ. of Guelph.

Pletsch, D.H. and O. Meier. (1982) *4-H Wellington County member survey: a report.* Univ. of Guelph, Nov.

Rozee, B. and J.S. Wolfe. (1982) "The Northern Clay Belt agricultural survey." *Northern Ont. Outreach Tech. Paper No. 3.* p. 102; also *Summary Rpt.* p. 15.

PRESENTATIONS

Brown, K.H. and A.E. Martin Matthews. (1982) Issues in adjustment to retirement. Graduate-Faculty Seminar, Dept. of Family Studies. Univ. of Guelph, Jan.

Joseph, A.E., B.E. Smit and K.B. Beesley. (1982) Preferences for rural public services under variable budget constraints. Assn. Amer. Geogrs. San Antonio, TX, April.

Martin Matthews, A.E. (1982) Future directions in research on the rural elderly at the University of Guelph. Rural Development Outreach Project: "From Project to Program." Univ. of Guelph, May.

Smit, B.E. and A.E. Joseph. (1982) Reduce the rates but improve the services: Public input into local authority decisions on rates and service provision. New Zealand Geogr. Soc. Auckland, N.Z., May.

AUDIO VISUAL

Blackburn, D.J. (1982) How extension stacks up as an information source for farmers. Synchronized slide-cassette tape. Univ. of Guelph, July.

Martin Matthews, A.E. (1982) Issues in rural and urban retirement. CKLA-FM Radio. Guelph, Mar.

Farm Management, Production Economics, Resource and Inputs

BOOKS, THESES, REPORTS

Onwona, S.O. (1982) *Development of management profiles on representative dairy farm types for assessment of their information requirements.* M.Sc. Thesis. Univ. of Guelph, Aug.

Pfeiffer, W.C. (1982) *A research oriented mathematical programming system for small computers - MINI MPS.* Tech. Bull. Sch. Agric. Ec. and Ext. Education. Univ. of Guelph.

Pfeiffer, W.C. (1982) *The Guelph farm cash flow analyzer, a microcomputer program for financial planning for farmers in Ontario.* Ext. Bull. Sch. Agric. Ec. and Ext. Education. Univ. of Guelph.

Setia, P. and W.C. Pfeiffer. (1982) *Measuring economic efficiency in dairy plants in Ontario.* Res. Rpt. Sch. Agric. Ec. and Ext. Education. Univ. of Guelph.

PRESENTATIONS

Clark, J.H. (1982) Predicting the changing size structure of dairy farms in Southern Ontario. Ont. Milk Mktg. Bd. Univ. of Guelph, May.

Driver, H.C. (1982) A critical review of the Price-Waterhouse approach to costs of milk production and of ODFAP's approach to data base. Can. Dairy Commission Seminar. Ottawa, Apr.

Driver, H.C. (1982) Supply management information needs and data base requirements. Can. Dairy Commission Seminar. Ottawa, Sept.

Marketing, Trade and Agricultural Policy

PERIODICALS

Dixon, B.L. and L.J. Martin. (1982) "Forecasting pork production using a random coefficient model." *Amer. J. Agric. Ec.* 64(3): 530-39.

Martin, L., M. Ceschi-Smith and M. Smith. (1982) "Feasibility study of an electronic auction for slaughter cattle in Ontario." *Breeder and Feeder.* May.

Menzie, E.L. and G.L. Brinkman. (1982) "Canadian agri-food strategy: appraisal." *Can. J. Agric. Ec.* 30(2): 95-106.

PROCEEDINGS

Brinkman, G.L. (1982) "Agricultural policy formulation and farm income data needs." *Proc. Workshop on Farm Income and Wealth Accounts.* Univ. of Man., Winnipeg, Man., Dec.

BOOKS, THESES, REPORTS

Ceschi-Smith, M., L.W Martin and M. Smith. (1982) *Feasibility of an electronic auction for slaughter cattle in Ontario.* Agric. Ec. and Ext. Ed. Bull. AEE/82/8. May.

Chute, R.G. (1982) *An econometric model of the world wheat market: A cartel simulation.* M.Sc. Thesis. Univ. of Guelph, Aug.

Griffith, G.R. and K.D. Meilke. (1982) *A structural econometric model of the world markets for rapeseed, soybeans and their products.* Rpt. AEEE/82/5, Sch. Agric. Ec. and Ext. Ed. Univ. of Guelph, Apr.

Griffith, G.R. and K.D. Meilke. (1982) *Tariffs and the Canadian rapeseed industry.* Rpt. 82/1, Sch. Agric. Ec. and Ext. Ed. Univ. of Guelph, Sept.

Martin, L. (1982) *Analysis of Canadian outlook.* Progress Rpt. Exp. Comm. on Mktg. and Trade. Ottawa, Dec.

Martin, L. and C.M. Scott. (1982) *Analysis of price spread behaviour for red meats.* Agric. Can. Oct.

Moreau, M. and L. Martin. (1982) *Analysis of survey of Canadian outlook users.* Dec.

Prentice, B.E. and G.L. Brinkman. (1982) *The values of agricultural research in Ontario: research methodology, data sources, and principle findings.* AEEE/82/9. Univ. of Guelph, July.

Qudrat-I-Elahi, Kh. (1982) *Performance of marketing boards - An analysis of the level and stability in poultry and table egg markets in Canada.* M.Sc. Thesis. Univ. of Guelph, Apr.

Scott, C.M. (1982) *Analysis of price spread behaviour of red meats.* M.Sc. Thesis. Univ. of Guelph, Sept.

Storey, G., C. Carter and K. Meilke. (1982) *Canadian agricutural trade: Its current and future performance. Agronews.* (Suppl.) Nov.

PRESENTATIONS

Brinkman, G.L. (1982) Conceptual issues in cost production pricing. Farm Products Appeal Tribunal. Guelph, Nov.

Brinkman, G.L. (1982) Conceptual issues in measuring sources of multifactor productivity change in Canadian agriculture. Agric. Can. Ottawa, Dec.

Brinkman, G.L. (1982) Economics of agriculture. Perth Co. Fed. Agric. Stratford, Feb.

Brinkman, G.L. (1982) Farm incomes and asset management. Halton Fed. Agric. Milton, Aug.

Brinkman, G.L. (1982) Live poor - die rich: the future of farmers and the economics of agriculture. Christian Farmers Club. Univ. of Guelph, Mar.

Brinkman, G.L. (1982) Long-term development options for Canadian agriculture. Hamilton-Wentworth Fed. Agric. Ancaster, June.

Brinkman, G.L. (1982) Multifactor productivity in Canadian agriculture. Agric. Can. Ottawa, Mar.

Martin, L. (1982) Outlook for beef and pork in 1982/83. Heritage Group Mgmt. Seminar. Kitchener, Mar.

AUDIO VISUAL

Brinkman, G.L. (1982) Agricultural development banks. "Radio Noon." CBC Radio. Milton, Aug.

Brinkman, G.L. (1982) Agricultural research is a high priority investment. OMAF radio. Guelph, June.

Brinkman, G.L. (1982) Current viability of agriculture. CKCO TV. Kitchener, Feb.

Brinkman, G.L. (1982) Farm performance in Canada. CFPL TV, London, CKVR TV, Barrie. Jan.

Brinkman, G.L. (1982) Farm performance in Canada in the 1970's. "Morningside," "As It Happens," "Radio Noon." CBC Radio. Jan.

Brinkman, G.L. (1982) Impact of land value changes on agriculture. CBC Radio. Toronto, Nov.

Brinkman, G.L. (1982) Options for Candian agriculture. CBC Radio. Vancouver, B.C., Aug.

Biomedical Sciences

PERIODICALS

Bhatnagar, M.K. and A. Singh. (1982) "Ultrastructure of turkey hepatocytes." *Anat. Rec.* 202: 473-82.

Bhatnagar, M.K., O.E. Vrablic and S. Yamashiro. (1982) "Ultrastructure alterations of the liver of Pekin ducks fed Methyl mercury-containing diets." *J. Toxicol. Environ. Health.* 10: 981-1003.

Black, W.D. and Claxton, M.J. (1982) "Distribution of neomycin in bull calves after intramuscular injection." *Can. Vet. J.* 23: 276-78.

Clandinin, M.T. and Yamashiro. (1982) "Dietary factors affecting the incidence of dietary fat-induced myocardial lesions." *J. Nutr.* 112: 825-28.

Eyre, P., P. Gaviller and J. Thorsen. (1982) "Equine influenza virus enhances responsiveness of guinea pig tracheal muscle to isoprenaline." *Res. Comm. Chem. Pathol. Pharmacol.* 37: 3-10.

Gentry, P.A. (1982) "The effect of administration of a single dose of T-2 toxin on blood coagulation in the rabbit." *Can. J. Comp. Med.* 46: 414-19.

Gibbins, A.M.V. and G.A. Robinson. (1982) "A comparison of diethylstilbestrol- and estradiol-17-B-induced vitellogenesis in quail." *Poult. Sci.* 61: 1188-93.

Gibbins, A.M.V. and G.A. Robinson. (1982) "Comparative study of the physiology of vitellogenesis in Japanese quail." *Comp. Biochem. Physiol.* 72A: 149-55.

Gibbins, A.M.V. and G.A. Templeton. (1982) "An immunological study of the diverse forms of vitellogenin identified in quail plasma." *Poult. Sci.* 61: 524-30.

Grovum, W.L. (1982) "Cholecystokinin administered intravenously did not act directly on the central nervous system or on the liver to suppress food intake by sheep." *J. Physiol.* (Lond). 326: 55-56.

Grovum, W.L. (1982) "The role of the gut, the liver and the brain in depressions of food intake produced by infusing pentagastrin into conscious sheep." *Ir. J. Med. Sci.* 151: 87.

Grovum, W.L. and B.F. Leek. (1982) "Preliminary evidence of some central nervous, peripheral and reflex actions of pentagastrin on gastric motility." *Ir. J. Med. Sci.* 151: 86.

Grovum, W.L. and H.W. Chapman. (1982) "Pentagastrin acted centrally to depress motility of the stomach in sheep." *Regulatory Peptides.* 3: 71.

Harris, W.H. (1982) "Effects of pharmacological agents on general hemodynamics and peripheral circulation during fetal and postnatal development." *Pharmac. Ther.* 16: 211-46.

Johnstone, I.B. (1982) "Inherited defects of hemostasis." *Commpend. Contin. Educ. Pract. Vet.* 4: 483-89.

Liptrap, R.M. and E. Doble. (1982) "A priming effect of gonadotrophin releasing hormone on luteninizing hormone secretion in the boar." *Can. J. Comp. Med.* 46: 283-86.

Martin, K.A. and R.M. Liptrap. (1982) "Effect of partial fetectomy on plasma 13,14 dihydro-15-keto- prostaglandin F2a in late pregnancy sows." *Anim. Reprod. Sci.* 4: 321-28.

Mirbahar, K.B. and P. Eyre. (1982) "Autacoid and autonomic reactivity of bovine and ovine bronchus: modification by antigenic sensitization." *Arch. Int. Pharmacodyn Ther.* 258: 60-70.

Mirbahar, K.B. and P. Eyre. (1982) "Occurrence of inhibitory histamine H2-receptors in bovine pulmonary arteries." *Eur. J. Pharmacol.* 77: 331-34.

Mirbahar, K.B. and P. Eyre. (1982) "Pharmacological characterization of bovine lung parenchyma strip: existence of alpha adrenoceptors." *Pak. Vet. J.* 2: 51-56.

Norris, A.A. and P. Eyre. (1982) "Pharmacological abnormality in bronchial asthma and the role of respiratory pathogens." *J. Medical Hypotheses.* 8: 199-205.

Raeside, J.I., N. Gofton, R.M. Liptrap and F.J. Milne. (1982) "Isolation and identification of steroids from gonadal vein blood of the fetal horse." *J. Reprod. Fert.* 32: 383-87.

Robinson, G.A. (1982) "Decreased transference of 153Gd into the oocytes of Japanese quail given ethylenediaminetetraacetate." *Poult. Sci.* 61: 375-78.

Vriend, R.A. and H.D. Geissinger. (1982) "Mammalian skeletal muscle: An interpretation of the scanning electron microscopic image." *Trans. Amer. Microsc. Soc.* 101(2): 117-25.

PROCEEDINGS

Agwu, D.E., B.J. Holub, I.B. Johnstone and S. Crane. (1982) "The enhanced incorporation of exogenous arachidonic acid into phosphatidylinositol and phosphatidylcholine of gerbil platelets stimulated with thrombin." *Proc. Amer. Oil Chemists' Soc.* Toronto, May. pp. 278.

Brown, W.R. and M.H. Hardy. (1982) "The asebia mouse: a new animal model of chronic inflammatory diseases like psoriasis." *Proc. Can. Fed. Bio. Soc.* 25: 155.

Fisher, K.R.S., D. Barrales and G. Partlow. (1982) Cyclopia and related nasal deformities in swine." *Can. Fed. Biol. Soc.* Edmonton, Alta., June. pp. 68.

Geissinger, H.D. and P.A. Rhodes. (1982) "Scanning electron microscopic study of endometrium during the late luteal phase and early lactation of sows." *5th World Congr. Acad. Environ. Path.* Sydney, Australia, Oct. pp. 195.

Grovum, W.L. (1982) "Studies on the palatability of salt and urea in sheep." *Proc. Nutr. Soc.* 41: 73A.

Hardy, M.H. and E.A. Goldberg. (1982) "Morphological changes at the basement membrane during some tissue interactions in the integument." *Proc. Can. Fed. Bio. Soc.* 25: 42.

Lobb, D.K. and J.I. Raeside. (1982) "Studies on steroidogenesis activity of boar Sertoli cells in vitro." *VI Intl. Congr. Horm. Steroids.* Jerusalem, Israel, Sept. Abstr. 25.

Raeside, J.I. and R.L. Renaud. (1982) "Secretion of estrogens and androgens by purified Leydig cells from testes of the boar." *15th Ann. Mtg. Soc. Study Reprod.* Madison, WS, July. Abstr. 74.

BOOKS, THESES, REPORTS

Alexander, D.I. (1982) *Autonomic pharmacology of the bovine vasculature in vitro.* M.Sc. Thesis. Univ. of Guelph, Mar.

Autenried, P. (1982) *A quantitative release study of slow-reacting substance of anaphylaxis and histamine from sheep, calf and guinea pig lung.* M.Sc. Thesis. Univ. of Guelph, Dec.

Barrales, D.E. (1982) *Congenital defects in pigs.* M.Sc. Thesis. Univ. of Guelph, Sept.

Boermans, H.J. (1982) *Study of fatty liver induced by ethionine and starvation in the bovine.* M.Sc. Thesis. Univ. of Guelph, Spr.

Frombach, S. (1982) *Detection of pigs susceptibe to malignant hyperthermia (porcine stress syndrome).* M.Sc. Thesis. Univ. of Guelph, Apr.

Goldberg, E. (1982) *Heterotypic cell contacts during an instructive interaction in hair follicle development in the mouse.* M.Sc. Thesis. Univ. of Guelph, Sept.

Jackson, P.A. (1982) *Actions of contraction related vasodilators on prefused intermuscular arteries in vitro.* M.Sc. Thesis. Univ. of Guelph, Aug.

Knipe, C.J. (1982) *An intermicroscopic correlative study of T-tubules in normal and diseased skeletal muscle.* M.Sc. Thesis. Univ. of Guelph, Dec.

Lobb, D.K. (1982) *An investigation on the isolation and purification of sertoli cells from mature boars for studies of steroidogenisis in vitro.* M.Sc. Thesis. Univ. of Guelph, July.

Ogunbiyi, P.O. (1982) *Evaluation of ketanserin (a new antitryptaminergic agent) in bovine lung.* M.Sc. Thesis. Univ. of Guelph, Dec.

Perron, R.J. (1982) *Pharmalogical modulation of histamine release from calf leucocytes.* Ph.D. Thesis. Univ. of Guelph, Dec.

PRESENTATIONS

Fisher, K.R.S., D. Barrales and G. Parlow. (1982) Congenital abnormalities and genetic disease. The Hidden Enemy. Swine Health Res. Day. Guelph, Nov.

Gibbins, A. (1982) Estrogen-induced vitellogenesis in Japanese quail. Seminar in biology department, Concordia Univ., Montreal, Que.

Mir, Z., G.K. MacLeod, J.G. Buchanan-Smith, D.G. Grieve and W.L. Grovum. (1982) Protein utilization by calves fed soybean meal protected with NaOH, fresh blood or fish hydrolysate. Joint Ann. Mtg. Amer. Soc. Anim. Sci. and Can. Soc. Anim. Sci. Guelph, Aug.

Pathology

PERIODICALS

Allen, D.G. and J.A. Johnson. (1982) "Aortic valvular dysplasia with subvalvular aortic stenosis." *Can. Vet. J.* 23: 228-29.

Al-Izzi, S.A. and M.G. Maxie. (1982) "Effect of corynebacterium parvum on bone marrow macrophage colony production, peripheral blood leukocytes, and histologic changes of tissues in calves." *Amer. J. Vet. Res.* 43: 2244-47.

Al-Izzi, S.A., M.G. Maxie and V.E.O. Valli. (1982) "Morphology and cytochemistry of bovine bone marrow mononuclear phagocytes." *Can. J.*

Al-Izzi, S.A., M.G. Maxie and M. Savan. (1982) "The pulmonary clearance of pasteurella haemolytica in calves given corynebacterium parvum and infected with parainfluenza-3 virus." *Can. J. Comp. Med.* 46: 85-90.

Al-Izzi, S.A., M.G. Maxie and V.E.O. Valli. (1982) "Morphology and cytochemistry of bovine bone marrow mononuclear phagocytes." *Can. J. Comp. Med.* 46: 130-32.

Al-Izzi, S.A., M.G. Maxie and V.E.O. Valli. (1982) "Proliferative, morphologic and cytochemical characterstics of bovine bone marrow macrophage colonies in liquid culture." *Amer. J. Vet. Res.* 43: 1868-72.

Al-Izzi, S.A., M.G. Maxie, V.E.O. Vallie, B.N. Wilkie and J.A. Johnson. (1982) "The kinetics of mononuclear phagocytes in normal calves and in calves given corynebacterium parvum." *Can. J. Comp. Med.* 46: 138-45.

Barker, I.K. and D.A. Titche. (1982) "Gastric dysfunction in sheep infected with trichostrongylus colubriformis, a nematode inhabiting the small intestine." *Intl. J. Parasitol.* 12: 345-56.

Barker, I.K., F.W. Mallory and R.J. Brooks. (1982) "Spontaneous gastric squamous cell carcinomas and other neoplasms in Greenland Collared Lemmings (Dicrostonyx greenlandicus)" *Can. J. Comp. Med.* 46: 307-13.

Egwang, T.G. and J.O.D. Slocombe. (1982) "Evaluation of the Cornell-Wisconsin centrifugal flotation technique for recovering trichostrongylid eggs from bovine feces." *Can. J. Comp. Med.* 46: 133-37.

Humphrey, P.B., P.B. Little, D.A. Barnum, P.A. Doig, L.R. Stephens and J. Thorsen. (1982) "Occurrence of haemophilus somnus in bovine semen and in the prepuce of bulls and steers." *Can. J. Comp. Med.* 46: 215-17.

Humphrey, J.D., P.B. Little, L.R. Stephens, D.A. Barnum, P.A. Doig and J. Thorsen. (1982) "Prevalence and distribution of haemophilus somnus in the male bovine reproductive tract." *Amer. J. Vet. Res.* 5(43): 791-95.

Kaaya, G.P., N. Jamal, M.G. Maxie and H.A. Messner. (1982) "Characteristics of erythroid colonies formed by bovine marrow progenitor cells in methyl cellulose cultures. *Res. Vet. Sci.* 32: 213-20.

Leishman, D., R.B. Miller and P.A. Doig. (1982) "A quantitative study of the histological morphology of the endometrium of normal and barren mares." *Can. J. Comp. Med.* 46: 17-20.

Lopez, A., F. Gilka, L.E. Lillie, R.G. Thomson, M.G. Maxie and I. McMillan. (1982) "A mouse model for estimation of pasteurella haemolytica deposition in calf lungs following aerosol exposure." *Can. J. Comp. Med.* 46: 314-16.

Lumsden, J.H. (1982) "SI Units in Veterinary Medicine." *Can. J. Comp. Med.* 46: 103-104.

Martin, S.W., A.H. Meek, D.G. Davis, J.A. Johnson and R.A. Curtis. (1982) "Factors associated with mortality and treatment costs in feedlot calves: The Bruce county beef project, years 1978, 1979, 1980." *Can. J. Comp. Med.* 46: 341-49.

Maxie, M.G., T.T. Dolan, W.G.Z. Jura, H. Tabel and M.J. Flowers. (1982) "A comparative study of the diseases in cattle caused by theileria parva or T. lawrencei: II. Hematology, clinical chemistry, coagulation studies and complement." *Vet. parasitol.* 10: 1-19.

McKinnon, A.O., J. Thorsen, M.A. Hayes and C.R. Misener. (1982) "Enzootic nasal adenocarcinoma of sheep in Canada." *Can. Vet. J.* 23: 88-94.

McKinnon, A.O., M.A. Hayes, T. Stirtzinger and C.R. Misener. (1982) "Nasal tumors of sheep." *Highlights Agric. Res. Ont.* 5(4): 12-13.

Prescott, C.A., B.N. Wilkie, B. Hunter and R.J. Julian. (1982) "Influence of a purified grae of pentachlorophenol on the immune response of chickens." *Amer. J. Vet. Res.* 43: 481-87.

Slocombe, J.O.D. and B.M. McCraw. (1982) "Controlled tests of fenbendazole against migrating strongylus vulgaris in ponies." *Amer. J. Vet. Res.* 43: 541-42.

Slocombe, J.O.D., B.M. McGraw, P.W. Pennock and J. Vasey. (1982) "Effectiveness of ivermectin against later 4th-stage strongylus vulgarie in ponies." *Amer. J. Vet. Res.* 43: 1525-29.

St. John, V.S., B. Wilcock and M. Kierstead. (1982) "Streptococcus suis type 2 infection in swine in Ontario: A review of clinical and pathological presentations." *Can. J. Comp. Med.* 23: 95-97.

Stephens, L.R., P.B. Little, J.D. Humphrey, B.N. Wilkie and D.A. Barnum. (1982) "Vaccination of cattle against experimentally induced thromboembolic meningoecephalitis with a Haemophilus somnus bacterin." *Amer. J. Vet. Res.* 43: 1339-42.

Valdivieso-Garcia, A., S. Rosendal and M.G. Maxie. (1982) "Biologic effects of sonicated suspension and phenol-water extract of mycoplasma mycoides subsp. mycoides in goats." *Can. J. Comp. Med.* 46: 190-97.

Zinc, MC., J.A. Johnson, J.F. Prescott and P.J. Pascoe. (1982) "The interaction of corynebacterium (Rhodococcus) equi and equine alveolar macrophages in vitro." *J. Reprod. Fertil. Suppl.* 32: 491-96.

BOOKS, THESES, REPORTS

Carriere, P.D. (1982) *Exposure of calves to aerosols of parainfluenza-3 virus and pasteurella haemolytica.* M.Sc. Thesis. Univ. of Guelph, May.

Clarke, M.W. (1982) *Cellular and humoral immune responses of sheep to experimental infection with haemonchus contortus.* Ph.D. Thesis, Univ. of Guelph, Jan.

Ernst, J. (1982) *Dirofilaria immitis: Its vectors in southwestern Ontario and its tolerance to low temperatures in aedes triseriatus.* M.Sc. Thesis. Univ. of Guelph, May.

Humphrey, J.D. (1982) *Haemophilus somnus: Colonization of the bovine reproductive tract, strain variation and pathogenicity.* Ph.D. Thesis, Univ. of Guelph, Oct.

Muchemi, G.K.M. (1982) *A study of muscle cysticercosis in wild animals of Kenya.* M.Sc. Thesis. Univ. of Guelph, Dec.

Sarmiento, J.T. (1982) *Environmental temperature: A predisposing factor in the enterotoxigenic escherichia coli induced diarrhea of the new born pig.* M.Sc. Thesis. Univ. of Guelph, Apr.

Watkins, A.R.J. (1982) *The inheritence of arrested development in the rabbit stomach worm obeliscoides cuniculi.* Ph.D. Thesis, Univ. of Guelph, Apr.

Zinc, M.C. (1982) *The in vitro interaction of the foal alveolar macrophage with corynebacterium equi.* M.Sc. Thesis. Univ. of Guelph, June.

PRESENTATIONS

Thorsen, J., R.A. Willoughby, W. McDonell, V.E.O. Valli and L. Viel. (1982) Influenza hemagglutination inhibiting activity in respiratory mucus from horses with chronic obstructive pulmonary disorders. Conf. Res. Workers Anim. Dis. Chicago, IL.

Veterinary Microbiology and Immunology

PERIODICALS

Al-Izzi, S.A., M.G. Maxie and M. Savan. (1982) "The pulmonary clearance of pasteurella haemolytica in calves given corynebacterium parvum and infected with parainfluenze-3 virus." *Can. J. Comp. Med.* 46: 85-90.

Al-Izzi, S.A., M.G. Maxie, V.E.O. Valli, B.N. Wilkie and J.A. Johnson. (1982) "The kinetics of mononuclear phagocytes in normal calves and in calves given corynebacterium parvum." *Can. J. Comp. Med.* 46: 138-45.

Barnum, D.A. and A.H. Meek. (1982) "Somatic cell counts, mastitis and milk production in selection Ontario dairy herds." *Can. J. Comp. Med.* 46: 12-16.

Barnum, D.A., R.E. Johnson and B.W. Brooks. (1982) "An evaluation of a teat dip with dodecyl benzene sulfonic acid in preventing bovine mammary gland infection from experimental exosure to streptococcus agalactiae and staphylococcus aureus." *Can. Vet. J.* 23: 50-54.

Bouffard, A., J.B. Derbyshire and B.N. Wilkie. (1982) "Effect of lymphocytes and broncho-alveolar washing cells on the replication of bovine herpesvirus type I in tracheal organ cultures." *Vet. Microbiol.* 7: 241-51.

Bowe, P.S., H.J. Van Kruiningen and S. Rosendal. (1982) "Attempts to produce granulomatous colitis in boxer dogs with a mycoplasma." *Can. J. Comp. Med.* 46: 430-33.

Brooks, B.W. and D.A. Barnum. (1982) "The use of polyethylene intramammary device in protection of the lactating bovine udder against experimental infection with Staphylococcus aureus or Streptococcus agalactiae." *Can. J. Comp. Med.* 46: 267-69.

Brooks, B.W., D.A. Barnum and A.H. Meek. (1982) "A survey of mastitis in selected Ontario dairy herds." *Can. Vet. J.* 23: 156-59.

Devenish, J.A. and D.A. Barnum. (1982) "Evaluation of the API 20E system for the identification of gram-negative nonfermenters from animal origin." *Can. J. Comp. Med.* 46: 80-84.

Dohoo, I.R. (1982) "Cost of extended open period in dairy cattle." *Can. Vet. J.* 23: 229-30.

Dohoo, I.R. and A.H. Meek. (1982) "Somatic cell counts in bovine milk." *Can. Vet. J.* 23: 119-25.

Eyre, P., P. Gaviller and J. Thorsen. (1982) "Equine influenza virus enhances responsiveness of guinea pig tracheal muscle to isoprenaline." *Res. Comm. Chem. Pathol. Pharmacol.* 37: 3-10.

Hadad, J.J. and C.L. Gyles. (1982) "Scanning and transmission electron microscopic study of the small intestine of colostrum-fed calves infected with selected strains of escherichia coli." *Amer. J. Vet. Res.* 43: 41-49.

Hadad, J.J. and C.L. Gyles. (1982) "The role of K antigens of enteropathogenic escherichia coli in colonization of the small intestine of calves." *Can. J. Comp. Med.* 46: 21-26.

Humphrey, J.D., P.B. Little, D.A. Barnum, P.A. Doig, L.R. Stephens and J. Thorsen. (1982) "Occurrence of "haemophilus somnus" in bovine semen and in the prepuce of bulls and steers." *Can. J. Comp. Med.* 46: 215-17.

Humphrey, J.D., P.B. Little, L.R. Stephens, D.A. Barnum, P.A. Doig and J. Thorsen. (1982) "Prevalence and distribution of haemophilus somnus in the male bovine reproductive tract." *Amer. J. Vet. Res.* 5(43): 791-95.

Hunter, D.B. and J.F. Prescott. (1982) "Vaccination of mink against haemorrhagic pneumonia caused by pseudomonas aeruginosa using a commercial bacterin." *Can. Vet. J.* 23: 371-72.

Lombin, L.H., S. Rosendal and W.R. Mitchell. (1982) "Evaluation of the complement fixation test for the diagnosis of pleuropneumonia of swine caused by haemophilus pleuropneumonia." *Can. J. Comp. Med.* 46: 109-14.

Manninen, K.I., J.F. Prescott and I.R. Dohoo. (1982) "Pathogenicity of Campylobacter jejuni isolates from animals and man." *Infect. Immun.* 38: 46.

Martin, S.W., A.H. Meek, D.G. Davis, J.A. Johnson and R.A. Curtis. (1982) "Factors associated with mortality and treatment costs in feedlot calves: The Bruce county beef project, years 1978, 1979, 1980." *Can. J. Comp. Med.* 46: 341-49.

Martin, S.W., S.A. Aziz, W.C.D. Sandals and R.A. Curtis. (1982) "The association between clinical disease, production and culling of Holstein-Friesian cows." *Can. J. Anim. Sci.* 62: 633-40.

McKinnon, A.O., J. Thorsen, M.A. Hayes and C.R. Misener. (1982) "Enzootic nasal adenocarcinoma of sheep in Canada." *Can. Vet. J.* 23: 88-94.

Meek, A.H. and D.A. Barnum. (1982) "The application of bulk tank somatic cell counts to monitoring mastitis levels in dairy herds." *Can. J. Comp. Med.* 46: 7-11.

Mosimabale, F. and C.L. Gyles. (1982) "The pathogenicity of yersinia enterocolitica strains isolated from various sources in four test systems." *Can. J. Comp. Med.* 46: 70-75.

Muckle, C.A. and C.L. Gyles. (1982) "Characterization of strains of corynebacterium pseudotuberculosis." *Can. J. Comp. Med.* 46: 206-208.

Mutimer, M.D., J.F. Prescott and J.B. Woolcock. (1982) "Capsular serotypes of Rodococcus equi." *Aust. Vet. J.* 58: 67.

Prescott, C.A., B.N. Wilkie, B. Hunter and R.J. Julian. (1982) "Influence of a purified grade of pentachlorophenol on the immune response of chickens." *Amer. J. Vet. Res.* 43: 481-87.

Prescott, J.F. and D.L. Munroe. (1982) "Campylobacter jejuni enteritis in man and domestic animal." *J. Amer. Vet. Med. Assn.* 181: 1524.

Prescott, J.F., M. Lastra and L. Barksdale. (1982) "Equi factors in the identification of Corynebacterium equi Magnusson." *J. Clin. Microbiol.* 16: 988.

Prescott, J.F., S.K. Srivastava, R. DeGannes and D.A. Barnum. (1982) "A mild form of strangles caused by an atypical Streptococcus equi." *J. Amer. Vet. Med. Assn.* 180: 293-94.

Rosendal, S. (1982) "Haemophilus pleuropneumonia update." *Hog Market Place Qtly.* Fall ed.

Rosendal, S. (1982) "Pleuropneumonia in pigs. Research on a new problem." *Highlights Agric. Res. Ont.* 5: 11-13.

Rosendal, S. and D.A. Boyd. (1982) "Haemophilus pleuropneumonia serotyping." *J. Clin. Microbiol.* 16: 840-43.

Shewen, PE. and B.N. Wilkie. (1982) "Antibody titers to pasteurella haemolytica A1 in Ontario beef cattle." *Can. J. Comp. Med.* 46: 354-56.

Shewen, P.E. and B.N. Wilkie. (1982) "Cytotoxin of Pasteurella haemolytica acting on bovine leukocytes." *Infect. Immun.* 35: 91-94.

Srivastava, S.K. and D.A. Barnum. (1982) "Lymphocyte stimulation response in horses against phytohaemagglutinin and M protein of streptococcus equi using whole blood." *Can. J. Comp. Med.* 46: 51-56.

Stephens, L.R., P.B. Little, J.D. Humphrey, B.N. Wilkie and D.A. Barnum. (1982) "Vaccination of cattle against experimentally induced thromboembolic meningoecephalitis with a Haemophilus somnus bacterin." *Amer. J. Vet. Res.* 43: 1339-42.

Thorsen, J., N. Weninger, L. Weber and C. Van Dijk. (1982) "Field trials of an immunization procedure againt hemorrhagic enteritis of turkeys." *Avian Dis.* 26: 473-77.

Tizard, I.R. and J. Sheppard. (1982) "Influence of palmitic acid on mouse lymphocyte function in vivo and in vitro." *Int. Arch. Allergy Appl. Immunol.* 67: 197-99.

Tizard, I.R., N.A. Fish and F. Caoili. (1982) "False-positive reactions in the immunoprecipitation test for meat identification." *J. Food Prot.* 45: 353-55.

Valdivieso-Carcia, A. and S. Rosendal. (1982) "Variation in colony size of mysoplasma mysoides subspecies mycoides isolated from goats." *Vet. Rec.* 110: 470-71.

Wilkie, B.N. (1982) "Allergic respiratory disease." *Adv. Vet. Sci. Comp. Med.* 26: 233-66.

Wilkie, B.N. (1982) "Respiratory tract immune response to microbial pathogens." *J. Amer. Vet. Med. Assn.* 181: 1074-79.

Zinc, M.C., J.A. Johnson, J.F. Prescott and P.J. Pascoe. (1982) "The interaction of corynebacterium (Rhodococcus) equi and equine alveolar macrophages in vitro." *J. Reprod. Fertil. Suppl.* 32: 491-96.

PROCEEDINGS

Brooks, B.W. and D.A. Barnum. (1982) "Biochemical and morphological characterization of strains of Corynebacterium bovis." *63rd Ann. Mtg., Conf. Res. Workers in Anim. Dis.* Chicago, IL, p. 25.

Brooks, B.W. and D.A. Barnum. (1982) "Corynebacterium bovis and the protection of the bovine mammary gland against infection with pathogenic bacteria." *32nd Ann. Mtg., Can. Soc. of Microbiologists.* Que. p. 94.

Brooks, B.W. and D.A. Barnum. (1982) "Protection of the bovine mammary gland against infection with Corynebacterium bovis." *82nd Ann. Mtg. Amer. Soc. of Microbiologists.* GA. p. 74.

Kahrs, R.F. and J. Thorsen. (1982) "Interpretation of seriological tests for bovine viral diseases." *Proc. Amer. Assn. Bovine Pract.* pp. 113-16.

Srivastava, S.K. and D.A. Barnum. (1982) "Adherence of Streptococcus equi on equine epithelial cells and the role of various surface structures in adherence." *32 Ann. Mtg., Can. Soc. Microbiologists. p. 90.*

BOOKS, THESES, REPORTS

Anderson, W.R. (1982) *Salmonella in Ontario turkeys and practical aspects of competitive exclusion.* M.Sc. Thesis. Univ. of Guelph. Jan.

Araya-Sanchez, L. (1982) *Concentration of heat-stable enterotoxin (STa) in the feces of calves with diarrhea due to escherichia coli.* M.Sc. Thesis. Univ. of Guelph, May.

Brooks, B. (1982) *The role of corynebacterium bovis in the control of bovine udder infection.* Ph.D. Thesis. Univ. of Guelph, Jan.

Cepica, A. (1982) *Antibody-dependent cell-mediated cytotoxicity and spontaneous cell-mediated cytotoxicity in porcine transmissible gastroenteritis.* Ph.D. Thesis. Univ. of Guelph, Jan.

Chirino-Trejo, J.M. (1982) *Identification and antimicrobial susceptibility of anaerobic bacteria from pneumonic cattle lungs.* M.Sc. Thesis. Univ. of Guelph, Sept.

Derbyshire, J.B. (1982) "Microbial disease and animal productivity." *CRC Handbook of Agricultural Productivity, Vol. II.* Ed. by Miloslav Rechcigl. CRC Press Inc. pp. 345-52.

Dohoo, I. (1982) *The epidemiology of diseases, production and culling in Holstein-Friesian cows.* Ph.D. Thesis. Univ. of Guelph, Sept.

Gilbride, K. (1982) *The in vitro antimicrobial susceptibilities of haemophilus pleuropneumoniae and the development of a selective medium.* M.Sc. Thesis. Univ. of Guelph, Aug.

Harnett, N. (1982) *A comparison of porcine class 2 and bovine enterotoxigenic strains of Escherichia coli.* Ph.D. Thesis. Univ. of Guelph, Jan.

Munroe, D.L.G. (1982) *The isolation and serotying of campylobacter jejuni and campylobacter coli from animals.* M.Sc. Thesis. Univ. of Guelph, Aug.

Reid, C. (1982) *Prevention of salmonella colonization of the alimentary tract of turkey poults by early establishment of the normal intestinal flora.* M.Sc Thesis. Univ. of Guelph, Jan.

Shewen, P.E. (1982) *The role of pasteurella haemolytica cytotoxin in bovine pneumonic pasteurellosis.* Ph.D. Thesis. Univ. of Guelph, Aug.

Srivastava, S. (1982) *Immunization and epithelial cell adhesion in equine using streptococcus equi.* Ph.D. Thesis. Univ. of Guelph, Apr.

PRESENTATIONS

Barnum, D.A. (1982) Results of use of intramammary device. OMMB Res. Sem. Guelph, May.

Barnum, D.A. (1982) Somatic cell counting. OMAF - Milk Ind. Br. Fieldmen Conf. Guelph, Oct.

Barnum, D.A. (1982) Studies on Coryne. bovis. OMMB Res. Sem. Guelph, May.

Barnum, D.A. (1982) Studies on new udder infections. OMMB Res. Sem. Guelph, May.

Barnum, D.A., R.H. Johnston and J.F. Prescott. (1982) Experimental infection of the bovine mammary gland with Campylobacter jejuni. Mastitis Res. Workers Conf. Hershey, PA.

Bigras-Poulin, M., A.H. Meek, S.W. Martin, I. McMillan, D.J. Blackburn and D.G. Grieve. (1982) The influence of socio-psychological aspects of management on disease occurrence and productivity of dairy herds. Third Intl. Symp. Vet. Epidemiology Ec. Washington.

Cepica, A. and J.B. Derbyshire. (1982) Spontaneous cell-mediated cytotoxicity in porcine transmissible gastroenteritis. Amer. Soc. Virology Ann. Mtg. Ithaca, N.Y.

Cepica, A. and J.B. Derbyshire. (1982) Spontaneous cell-mediated cytotoxicity in porcine transmissible gastroenteritis. IV Intl. Conf. on Comparative Virology, Banff.

Chirino-Trejo, M. and J.F. Prescott. (1982) The identification and antimicrobial susceptibility of anaerobic bacteria from pneumonic cattle. Can. Soc. Microbiol. Quebec.

Chirino-Trejo, M. and J.F. Prescott. (1982) The identification and antimicrobial susceptibility of anaerobic bacteria from pneumonic cattle. Conf. Res. Workers Anim. Dis. Chicago, IL.

DePauli, F.J., B.N. Wilkie and J.B. Derbyshire. (1982) Intestinal immunization of foxes with killed rabies virus. Conjoint Mtg. on Infectious Dis. Toronto.

Derbyshire, J.B. (1982) Recent developments in veterinary viral vaccines. Conjoint Mtg. on Infectious Dis. Toronto.

Dohoo, I.R. (1982) Dairy disease monitoring program. OMMB Res. Sem. Guelph, May.

Gyles, C.L. (1982) Immunity against E. coli in young pigs. Swine Health Res. Rev. Day. Univ. of Guelph. Nov.

Gyles, C.L. (1982) Immunological means of prevention of neonatal diarrhea in dairy calves. Dairy Cattle Health Res. Rev. Day. Guelph, Oct.

Harnett, N.M. and C.L. Gyles. (1982) Linkage of genes for ST, drug resistance and K99 in bovine and porcine strains of enterotoxigenic Egcherichia coli. Can. Soc. Microbiologists Ann. Mtg. Que.

Hazlett, M. and D.A. Barnum. (1982) Experimental infection of the bovine mammary gland with Haemophilus somnus. Mastitis Res. Workers Conf. Hershey, PA.

Martin, S.W., J.D. Holt and A.H. Meek. (1982) The effects of risk factors as determined by logistic regression on health of beef feedlot calves. Third Intl. Symp. Vet. Epidemiology Ec. Washington.

Meek, A.H. (1982) Update on OMAF Lottery Project. OMMB Res. Sem. Guelph. May.

Meek, A.H., S.W. Martin, J.B. Stone, I. McMillan and J.B. Britney. (1982) Factors associated with productivity and disease occurrence in Ontario dairy herds. Third Intl. Symp. Vet. Epidemiology Ec. Washington.

Meek, A.H. and B.W. Stahlbaum. (1982) The implementation of a veterinary medical information management system for the Ontario Veterinary College - An overview Symposium on Computer Applications in Veterinary Medicine. Miss. State Univ.

Munroe, D.L. and J.F. Prescott. (1982) Isolation and serotyping of animal isolates of Campylobacter jejuni and C. coli Can. Soc. Microbiologists Ann. Mtg. Que.

Munroe, D.L. and J.F. Prescott. (1982) Isolaton and serotyping of animal isolates of Campylobacter jejuni and C. coli. Conjoint Mtg. Infect. Dis. Toronto.

Rosendal, S. and W.R. Mitchell. (1982) Factors associated with spread and effect of pleuropneumonia in pigs caused by haemophilus pleuropneumaniae. IPVS Mtg. Mexico.

Thorsen, J., R.A. Willoughby, W. McDonnell, V.E.O. Valli and L. Viel. (1982) Influenza hemagglutination inhibiting activity in respiratory mucus from horses with chronic obstructive pulmonary disorders. Conf. Res. Workers Anim. Dis. Chicago, IL.

Wilkie, B.N. (1982) General principles of desease resistance. Beef Cattle Health Res. Rev. Day. Guelph.

Wilkie, B.N. (1982) General principles of disease resistance. Dairy Cattle Health Res. Rev. Day. Guelph, Oct.

Wilkie, B.N. (1982) General principles of disease resistance. Swine Health Res. Rev. Day. Guelph.

Clinical Studies

PERIODICALS

Allen, D.G. (1982) "Echocardiography as a research and clinical tool in veterinary medicine." *Can. Vet. J.* 23: 313-16.

Allen, D.G. and J.A. Johnson. (1982) "Aortic valvular dysplasia with subvalvular aortic stenosis." *Can. Vet. J.* 23: 228-29.

Bosu, W.T.K. and C.A.V. Barker. (1982) "Steroid levels after intramuscular injection of testosterone propionate in the caprine." *Can. J. Comp. Med.* 46: 390-94.

Bosu, W.T.K., R.O. Waelchli-Suter and J. Vasey. (1982) "Induction of ovulation with gonadotrophin releasing hormone and progesterone in seasonally anestrous mares." *Can. Vet. J.* 23: 332-36.

Dust, A., A.M. Norris and V.E.O. Valli. (1982) "Cutaneous lymphosarcoma with IgG monoclonal gammopathy, serum hyperviscosity and hypercalcemia in a cat." *Can. Vet. J.* 23: 235-39.

Etherington, W.G., J.R. Vasey and F.D. Horney. (1982) "Ethmoid hematoma of the equine." *Can. Vet. J.* 23: 231-34.

Fatimah, I., D.G. Butler and P.W. Physick-Sheard. (1982) "Perforated duodenal ulcer in a cow." *Can. Vet. J.* 23: 173-75.

Friendship, R.M., W.T.K. Bosu and G.J. King. (1982) "Reproductive performance in sows treated with estradiol benzoate/human chorionic gonadotrophin combination at weaning." *Can. J. Comp. Med.* 46: 410-13.

Humphrey, J.D., P.B. Little. D.A. Barnum, P.A. Doig, L.R. Stephens and J. Thorsen. (1982) "Occurrence of "haemophilus somnus" in bovine semen and in the prepuce of bulls and steers." *Can. J. Comp. Med.* 46: 215-17.

Humphrey, J.D., P.B. Little, L.R. Stephens, D.A. Barnum, P.A. Doig and J. Thorsen. (1982) "Prevalence and distribution of haemophilus somnus in the male bovine reproductive tract." *Amer. J. Vet. Res.* 5(43): 791-95.

Hunter, D.B. and J.F. Prescott. (1982) "Vaccination of mink against haemorrhagic pneumonia caused by pseudomonas aeruginosa using a commercial bacterin." *Can. Vet. J.* 23: 371-72.

King, G.J., J.S. Walton and W.T.K. Bosu. (1982) "Potential treatments for anestrus in gilts and sows." *Can. Vet. J.* 23: 288-90.

Lawson, K.F., D.H. Johnston, J.M. Patterson, J.G. Black, A.J. Rhodes and E. Zalan. (1982) "Immunization of foxes vulpes vulpes by the oral and intramuscular routes with inactivated rabies vaccines." *Can. J. Comp. Med.* 46: 382-85.

Leishman, D., Miller R.B. and P.A. Doig. (1982) "A quantitative study of the histological morphology of the endometrium of normal and barren mares." *Can. J. Comp. Med.* 46: 17-20.

Martin, S.W., S.A. Aziz, W.C.D. Sandals and R.A. Curtis. (1982) "The association between clinical disease, production and culling of Holstein-Friesian cows." *Can. J. Anim. Sci.* 62: 633-40.

Martin, S.W., A.H. Meek, D.G. Davis, J.A. Johnson and R.A. Curtis. (1982) "Factors associated with mortality and treatment costs in feedlot calves: The Bruce county beef project, years 1978, 1979, 1980." *Can. J. Comp. Med.* 46: 341-49.

McKinnon, A.O., J. Thorsen, M.A. Hayes and C.R. Misener. (1982) "Enzootic nasal adenocarcinoma of sheep in Canada." *Can. Vet. J.* 23: 188-94.

Raeside, J.I., N. Gofton, R.M. Liptrap and F.J. Milne. (1982) "Isolation and identification of steroids from gonadal vein blood of the fetal horse." *J. Reprod. Fert.* 32: 383-87.

Slocombe, J.O.D., B.M. McCraw, P.W. Penock and J. Vasey. (1982) "Effectiveness of ivermectin against later 4th-stage strongylus vulgaris in ponies." *Amer. J. Vet. Res.* 43: 1525-29.

Waelchi-Suter, R.D., P.A. Doig, H.L. Ruhnke, N.C. Palmer and C.A.V. Barker. (1982) "Experimental genital ureaplasmosis in the bull." *Swheiz. Arch. Tierheilk.* 124: 273-95.

Zinc. M.C., J.A. Johnson, J.F. Prescott and P.J. Pascoe. (1982) "The interaction of corynebacterium (Rhodococcus) equi and equine alveolar macrophages in vitro." *J. Reprod. Fertil. Suppl.* 32: 491-96.

BOOKS, THESES, REPORTS

Benn, D. (1982) *The distribution and relevance of dirofilaria immitis in dogs in Southwestern Ontario, Huntsville/North Bay and Kingston.* M. Sc. Thesis. Univ. of Guelph, Jan.

Laliberte, L. (1982) *The epidemiology of coronovirus infections in cats with special reference to feline infectious peritonitis.* M.Sc. Thesis. Univ. of Guelph, May.

Seeler, D.C. (1982) *Clinical screening tests and malignant hyperthermia (porcine syndrome) in swine.* M.Sc. Thesis. Univ. of Guelph, Sept.

Waelchli-Suter, C.M. (1982) *The effect of a cortical deficiency on the biomechanics of long bones provided with a dynamic plate (DCP).* M.Sc. Thesis. Univ. of Guelph, Apr.

PRESENTATIONS

Ruhnke, H.L. (1982) Ureaplasmas in bovine genital tract disease. Medical Microbiol. Mtg. Toronto.

Thorsen, J., R.A. Willoughby, W. McDonnel, V.E.O. Valli and L. Viel. (1982) Influenza hemagglutination inhibiting activity in respiratory mucus from horses with chronic obstructive pulmonary disorders. Conf. Res. Workers Anim. Dis. Chicago, IL.

Truscott, R.B. and H.L. Ruhnke. (1982) The effect of antibiotics against bovine mycoplasma and ureaplasmas. Intl. Org. for Mycoplasmology. Japan.

Fish

PERIODICALS

Ferguson, H.W., M.J. Claxton, R.D. Moccia and E.J. Wilkie. (1982) "The quantitative clearance of bacteria from the bloodstream of rainbow trout (Salmo gairdneri)." *Vet. Pathol.* 19: 687-99.

Ferguson, H.W., R.D. Moccia and N.E. Down. (1982) "An epizootic of diffuse glomerulonephritis in white perch (Roccus americanus) from a heavily polluted industrial basin in Lake Ontario." *Vet. Pathol.* 19: 638-45.

Hilton, J.W. (1982) "The effect of pre-fasting diet and water temperature on liver glycogen and liver weight in rainbow trout (Salmo gairdneri R.) during fasting." *J. Fish Biol.* 20: 69-78.

Hilton, J.W. and D.G. Dixon. (1982) "Effect of increased liver glycogen and liver weight on liver function in rainbow trout (Salmo gairdneri R.): Recovery from anaesthesia and plasma BSP clearance." *J. Fish Dis.* 5: 185-95.

Hilton, J.W. and H.W. Ferguson. (1982) "Effect of excess vitamin D3 on calcium metabolism in rainbow trout (Salmo gairdneri R.)" *J. Fish Biol.* 21: 373-79.

Hilton, J.W. and J.L. Atkinson. (1982) "Response of rainbow trout (Salmo gairdneri) to increased levels of available carbohydrate in practical trout diets." *Br. J. Nutr.* 47: 597-607.

Hilton, J.W., J.L. Atkinson and S.J. Slinger. (1982) "Effect of dietary fibre on the growth of rainbow trout." *Can. J. Fish Aquat. Sci.* 40(1): 81-85.

Hilton, J.W., J.L. Atkinson and S.J. Slinger. (1982) "Maximum tolerable level, digestion and metabolism of d-glucose in rainbow trout (Salmo gairdneri)." *Can. J. Fish Aquat. Sci.* 39: 1229-34.

Hung, S.O., T.W. Moon, J.W. Hilton and S.J. Slinger. (1982) "Uptake, transport and distribution of DL-a-tocopheryl acetate in rainbow trout Salmo gairdneri)." *J. Nutr.* 112: 1590-99.

Kumaruguru, A.K., F.W.H. Beamish and H.W. Ferguson. (1982) "Direct and circulatory paths of Permethrin (NRDC-143) causing histopathological changes in the gills of rainbow trout, Salmo gairdneri Richardson." *J. Fish Biol.* 20: 87-91.

Woodward, B. (1982) "Riboflavin in supplementation of diets for rainbow trout." *J. Nutr.* 112: 908-13.

PRESENTATIONS

Hilton, J.W. and H.W. Ferguson. (1982) Effect of excess vitamin D on calcium metabolism in rainbow trout. Can. Fed. Biol. Soc. Ann. Mtg. Edmonton, Alta. June.

Hilton, J.W., J.L. Atkinson and S.J. Slinger. (1982) Maximum tolerable level, digestion and metabolism of cerelose (d-glucose) in rainbow trout. Proc. Fed. Soc. Exp. Biol. New Orleans, LA, Apr.

Hilton, J.W., J.L. Atkinson, B.J. Holub and S.J. Slinger. (1982) Effect of increased dietary fibre on the physiological response of rainbow trout (Salmo gairdneri). Ann. Mtg. World Mariculture Soc. Charleston, S.C. Mar.

Lanno, R.P. and J.W. Hilton. (1982) Effect of excess dietary copper on the growth and physiological response of rainbow trout (Salmo gairdneri) Proc. Ninth Ann. Aquatic Toxicity Workshop. Edmonton, Alta, Nov.

Slinger, S.J. and J.W. Hilton. (1982) Carbohydrate digestion and metabolism in salmonids. Joint Workshop Fish Culture - Fish Health Sections - Amer. Fisheries Soc. Boulder, CO, Feb.

Inventory of Agricultural Research Projects

The Inventory of Agricultural Research Projects contains all projects that were active during the fiscal year 1982-83. It shows all research projects funded in total or in part by the Ontario Ministry of Agriculture and Food. The research projects at the University of Guelph are carried out under an agreement with the ministry.

Contents

Agricultural Laboratory Services 67
  Animal Production
  Field Crops
  Horticultural Crops
  Soil and Water Management
  Pest Management and Disease Control
  Engineering
  Food and Food Quality

Centralia College of Agricultural Technology 67
  Field Crops
  Horticultural Crops
  Economics

Economics Branch 68

Horticultural Research Institute of Ontario 68
  Horticultural Crops
  Soil and Water Management
  Pest Management and Disease Control
  Food and Food Quality

Kemptville College of Agricultural Technology 70
  Animal Production
  Field Crops
  Horticultural Crops
  Engineering
  Food and Food Quality

New Liskeard College of Agricultural Technology 71
  Animal Production
  Field Crops
  Horticultural Crops
  Soil and Water Management
  Pest Management and Disease Control

Ridgetown College of Agricultural Technology 72
  Animal Production
  Field Crops
  Horticultural Crops
  Waste Management
  Pest Management and Disease Control
  Economics
  Engineering

University of Guelph 74
  Animal Production
  Field Crops
  Horticultural Crops
  Soil and Water Management
  Waste Management
  Land Use
  Pest Management and Disease Control
  Economics
  Engineering
  Food and Food Quality

Agricultural Laboratory Services

Project Title	*Researcher*
ANIMAL PRODUCTION	
Dissipation and Degradation of Pesticide Residues from Livestock and Poultry	Braun, Frank
Monitoring Wildlife for Pesticide and Pollutant Residues (1) Fur Bearers	Frank, Rasper, Braun, Stonefield, Strickland
FIELD CROPS	
Disappearance of Pesticides from Tobacco (1) Metalaxyl (2) Pyrethroids	Ripley, Gayed, Brenun
Monitoring Flue-Cured Tobacco and Tobacco Soils for Metals and Pesticides	Braun, Stonefield, Zilkey, Frank, Elliot, Rasper
HORTICULTURAL CROPS	
Evaluation of Pesticides in Mushroom	Ingratta, Braun, Ripley
Insecticide Evaluation for Pest Control in Minor Vegetable Crops in Ontario	Braun, McEwen, Frank, Ritcey, Ripley, Sears
Re-entry Studies in Vegetable and Fruit Crops (1) Captan	Frank, Braun, McEwen, Ritcey
Disappearance of Fungicide Residues in Fruit and Vegetables (1) Captan (2) EBDC	Frank, Braun, Ripley, Northover
Monitoring Domestic Fruit and Vegetables for Pesticide Residues	Frank, Braun, Ripley, Wheeler
SOIL AND WATER MANAGEMENT	
Monitoring River Mouth Suspended Solids and Water for Pesticides	Frank, Sirons, Braun, Ripley, Onn
Monitoring for Background and Elevated Levels of Metals in Agricultural Soils	Frank, Suda, Stonefield
Monitoring Agricultural Soils for Herbicide Residues (1) Triazines	Frank, Anderson, Sirons

Project Title	*Researcher*
PEST MANAGEMENT AND DISEASE CONTROL	
Monitoring for Organochlorine Residues in Ontario Residents	Frank, Braun, Smout, Rasper
Methodology Development for Monitoring Pesticides and Organic and Inorganic Pollutants	Braun, Sirons, Ripley, Stonefield
Monitoring Urine of Workers for Herbicides	Frank, Campbell, Sirons
Monitoring Water, Sediment, Aquatic Plants and Fish for Herbicides Used for Aquatic Weed Control	Sirons
ENGINEERING	
Measuring Efficiency of Sprayer Application, Rinsing Containers, etc.	Frank, Braun, Ripley, Hikichi, Morrow
FOOD AND FOOD QUALITY	
Monitoring Milk for Pesticide and Pollutant Residues	Frank, Sirons, Braun, Rasper, Ward
Monitoring Dispersion and Disappearance of Phenoxy Herbicides from Wild Fruit and General Vegetation from R.O.W. and Forested Areas	Frank, Sirons, Campbell
Monitoring Lake Simcoe Fish for Organochlorines and Metals	Frank, Braun, Stonefield, Dodge, Desjardin
Monitoring Fish and Biota from Great Lakes	Braun, Frank, Rasper
Monitoring Animal Tissues for Pesticide and Pollutant Residues	Braun, Frank, Rasper, Luyken

Centralia College of Agricultural Technology

FIELD CROPS	
Grain	
Evaluation of Plowdown Species in Spring Grain	R.E. Forrest
Weed Control in Corn	J.J. O'Toole
Protein and Oilseed Crops	
White Bean and Kidney Bean Management	R.E. Forrest
Soybean Management Trials	R.E. Forrest
Oil and Protein Crop Variety Trials	R.E. Forrest
The Effect of Crop Rotations on White Bean Yield	J.J. O'Toole
Weed Control	J.J. O'Toole
Weed Wiper	J.J. O'Toole

Project Title	*Researcher*
HORTICULTURAL CROPS	
Vegetables	
Rutabaga Management Trials	J.J. O'Toole, J.A. Marshall

Project Title	*Researcher*
ECONOMICS	
An Assessment of Farming Skills Acquired by Farm Youths	J.R. Stephens
Factors Affecting the Establishment and Success of Young Farmers	J.R. Stephens

Economics Branch

ECONOMICS	
Price Spreads for Red Meats in Ontario	K.J. Ong
Structural Adjustment in Ontario's Dairy Processing Industry	R. Caine
Corn Industry in Ontario	G.A. Fisher
The Economics of Flue-Cured Tobacco in Ontario, 1981	G.A. Fisher
Economic Analysis of Ontario's Barley Production and Marketing Potential	T. Crozier
The Ontario Soybean Industry in a Canadian Context	M. Jaeger
Economics of Fresh Market Tomato and Cabbage Production in Ontario, 1982	G.A. Fisher, D. Buth
Potato Storage and Packing Costs	B. Campbell
Apple Production Costs for Standard and Size-Controlling Trees, Ontario 1982	E. McKibbon, F. Abraham
Cost of Producing Processing Grapes	E. McKibbon
Strawberry Cost-of-Production	E. McKibbon, D. Buth
Rural Real Estate Values in Ontario, 1980	T. Tosine, J. Ong
A Survey of Custom Farmwork Rates Charged in Ontario, 1982	G.A. Fisher
Locational Factors Affecting Rural Ontario Land Prices, 1979-1980	T. Tosine
Rural Real Estate Prices in Ontario, 1981	T. Tosine
Farm Rental Arrangements in Ontario	G.A. Fisher, D. Buth
Comparison of Ownership and Use of Land in Selected Farm Areas of Eastern Ontario 1963-1978	H.F. Noble
Farm Enterprise Cost Estimating System	B. Campbell, G. Framst
Trends in Ontario Agriculture	F. Abraham

Horticultural Research Institute of Ontario

HORTICULTURAL CROPS	
Low Intensity Infrared Heating Systems for Greenhouses	T.J. Blom, F.J. Ingratta
Greenhouse Energy Conservation	F.J. Ingratta, T.J. Blom
Fruit	
Cold Tolerance Study of Grapevines	K.H. Fisher
Training Systems for Grape Cultivars	K.H. Fisher
Use of Growth Regulators	K.H. Fisher
Grapevine Population Studies in Relation to Yield and Quality	K.H. Fisher
Vinifera Cultivar and Rootstock Combination Trial	K.H. Fisher
Apricot Breeding and Cultivar Evaluation	K.H. Fisher
Grape Rootstock Experiments	K.H. Fisher
Breeding for Wine and Table Grapes Adapted to Ontario Conditions	K.H. Fisher
Salt Damage Protection	N.W. Miles
Chemical Thinning of Peaches	N.W. Miles
Growing Peaches Under Plastic	N.W. Miles
Intensive Peach Production	N.W. Miles
Tender Fruit Breeding and Cultivar Evaluation	N.W. Miles
Effect of Cultural and Harvesting Practices on Productivity Profitability and Mechanizstion in Strawberry Production	A. Dale, V.P. Gray, E.M. Lauro, G. Herbert

Project Title	*Researcher*
Chemical Weed Control in Small Fruit Crops	A. Dale
Development of Improved Strawberry Cultivars for Fresh Market & Processing	A. Dale
Ridge Culture of Strawberries	A. Dale
Breeding for a Seasonal Succession of Firm-Fleshed Non-Cracking Self-Fruitful Black Sweet Cherry Cultivars and Determination of Incompatibility of Selections and Cultivars	G. Tehrani
Rootstock and Management Studies in Pear	G. Tehrani
Breeding for Early Maturing European and Japanese Plums and Pollen Compatibility Studies with Plums	G. Tehrani
Breeding Sour Cherry Cultivars Superior to Montmorency	G. Tehrani
Rootstock Studies with Cherries	G. Tehrani
Rootstock and Management Studies in Plums	G. Tehrani
Evaluation of New Grape Cultivars for Wine Production	R. V. Chudyk, V.P. Gray
Evaluation of Various Apple Cultivars for the Production of Cider and Juice	R.B. Smith
The Improvement of Cranberry Growing in Ontario	R.B. Smith
Orchard Management for the Production of Fresh Market and Processing Apples	D.C. Elfving

Vegetables

Greenhouse Vegetable Crop Management	F.J. Ingratta
Vegetable Cultivar Trials	F.J. Ingratta
The Mushroom Casing Layer	F.J. Ingratta, R. Frank, Z.A. Patrick
Tomato Genetics	W.H. Courtney, Z.A. Patrick, L.V. Busch, J.W. Potter
Greenhouse Tomato Breeding	W.H. Courtney, Z.A. Patrick, J.W. Potter, W.R. Jarvis
Field Tomato Breeding	W.H. Courtney, Z.A. Patrick, B.H. MacNeill
Sweet Corn Breeding	W.H. Courtney
Cole Crop Production and Management	A. Loughton
Alternative Crops for Tobacco Farms	A. Loughton
Potato Production on Sandy Loam Soils on the Central Erie Counties	A.W. McKeown, R.G. Rowberry, G.R. Johnston
Management and Physiology of Processing Tomatoes	A.W. McKeown
Seed Potato Management and Physiology	A.W. McKeown

Project	*Researcher*
Production Practices for Pickling Cucumbers Grown for Mechanical and Hand Harvesting	J. O'Sullivan
Influence of Nitrogen Irrigation Method of Plant Establishment and Cultivars on Yield and Quality of Peppers	J. O'Sullivan
Night Temperatures on Long Seedless Cucumbers in the Greenhouse	M. Valk
Seeding Dates for Early Maturing Onions	M. Valk
Herbicide Studies with Muck Crops	M. Valk
Breeding and Cultivar Trials	M. Valk
Resistance to Horizontal Lesions in Carrots	M. Valk

Ornamentals

Greenhouse Floriculture Management	T.J. Blom
The Nutrient Film Technique for Flower Production	T.J. Blom
Propagation of Woody Ornamental Plants	R.A. Fleming
Rhododendron Breeding	R.A. Fleming
Container Nursery Stock Production	R.A. Fleming
Edible Nut Production and Propagation	R.A. Fleming
Holly Breeding	R.A. Fleming
Environmental Adaptation of Ornamental Plants	R.A. Fleming

SOIL AND WATER MANAGEMENT

Soil Management for Highbush Blueberry Production	R.A. Cline, N.W. Miles
Evaluation and Development Analytical Methods for Determining the Nutrient Status of Plant Material	R.A. Cline, H.J. Reissmann
Trickle Irrigation Studies for Horticultural Crops	R.A. Cline, H.J. Reissmann
Soil Management and Fertilizer Studies with Peach	R.A. Cline, H.J. Reissmann
Fertilizer and Soil Management Studies with Grapes	R.A. Cline, K.H. Fisher, K.J. Reissmann
Fertilizer and Soil Management Studies with Apple	R.A. Cline, H.J. Reissmann

PEST MANAGEMENT AND DISEASE CONTROL

Effect of Crop Protection Products on Industrial Microorganisms	R.V. Chudyk
The Development of Herbicide Programs for Weed Control in Various Horticultural Crops	J. O'Sullivan

Project	Researcher
FOOD AND FOOD QUALITY	
Storage Maturity Studies and Quality Evaluation of Fruits and Vegetables	C.L. Chu
Microbiology of Fermentation Processes	R.V. Chudyk
Development of Quality Standards for Commercial Grapes	R.V. Chudyk
Microbiological Stability of Horticultural Products	R.V. Chudyk
Freezing of Horticultural Products	R.V. Chudyk
Evaluation of the Processed Quality of Fruit and Vegetable Cultivars	V.P. Gray
Investigation of New Techniques and Cultivars in the Development of Potentially Useful Product from Fruits and Vegetables	T. Fuleki
The Chemistry of Ripening and Colour Development in Relation to Optimum Quality of Fruits and Vegetables and their Products	T. Fuleki
Recovery of Useful Constituents from Grape Pomace and Other Fruit and Vegetable Processing Plant Waste Materials	T. Fuleki
Colour and Quality Improvement of Wines in Relation to Chemical Constituents and Changes	T. Fuleki
Methodology of Testing and Training Sensory Evaluation Panels	V.P. Gray
Development of Appropriate Methods for the Sensory Evaluation of Fresh Stored and Processed Horticultural Commodities	V.P. Gray
Post Harvest Studies on Fruit Including Storage and Marketing of Small Fruit, Stone Fruit, Pome Fruit and Grapes	R.B. Smith
Post Harvest Studies on Vegetables Including Storage and Marketing	R.B. Smith
Celery Storage Treatment Trials	M. Valk

Kemptville College of Agricultural Technology

ANIMAL PRODUCTION	
Eastern Ontario Cooperative Farm Survey Program on Rearing Dairy Herd Replacements	E.E. Wheeler
Combination Implants in Holstein Steers	G.S. Hooper
Response of Neonatal Calves to Different Levels of Synovex H	L.A. Drevjany
Combination Implants in Crossbred Steers	G.S. Hooper
Supplementation of Energy to Fluid Skim Milk for White Veal	L.A. Drevjany
Whole Soybeans as a Protein Source	G.S. Hooper
Beefing Traits of Crossbred and Pureline Steers from the Ottawa N.C.D.C.B.P. Herd	L.A. Drevjany
Hull-less Oats Monodiet for Heavy Calves	L.A. Drevjany

FIELD CROPS	
Grains	
Cereal Variety Project	G. Hoekstra
Cereal Herbicide Project	D.W. MacDonald
Corn Variety Project	G. Hoekstra
Corn Fertility Project	W.E. Curnoe
Corn Management Project	G. Hoekstra
Corn Herbicide Project	D.W. MacDonald
Forages	
Forage Variety Project	J.E. Madill
Forage Herbicide Project	D.W. MacDonald
Forage Fertility Project	W.E. Curnoe
Forage Management Project	J.E. Madill
Protein and Oilseed	
Oilseed Management Project	J.E. Madill
Oilseed Variety Project	J.E. Madill
Oilseed Herbicide Project	D.W. MacDonald

HORTICULTURAL CROPS	
Fruit	
Small Fruit Variety Trials	J. Vandenberg, W.J. Ingratta
Orchard Management	J. Vandenberg, W.J. Ingratta
Maple Syrup Production	W.J. Langenberg
Blueberry Cultural Practices	J. Vandenberg, W.J. Ingratta
Sterilization of Maple Sap by Ultra-Violet Irradiation	W.J. Langenberg
Evaluation of Straw Mulch Hill Systems and Plant Spacing for Strawberry Production	J. Vandenberg, W.J. Ingratta

Vegetables

Project	Researcher
Vegetable Variety Trials for Eastern Ontario (Part A)	W.J. Langenberg
Vegetable Variety Trials for Eastern Ontario (Part B - Cole Crops)	W.J. Langenberg
Growing of Fresh Market Tomatoes on Various Dates and Under Different Cultural Practices	W.J. Langenberg

ENGINEERING

Project	Researcher
Tillage Power Requirements	J.H. Clark, J.R. Gillespie
Comsolve Computer Programs	J.H. Clark
Development and Field Testing of a Field Model Tractor Performance Meter	J.H. Clark, J.R. Gillespie
Environmental Study of an Open Beef Barn Under Eastern Ontario Conditions	J.H. Clark, G.S. Cooper
Study of Continuous Flow Manure System in a Cold Barn Under Eastern Ontario Conditions	J.H. Clark, G.S. Hooper
Evaluation of Various Types of Solar Panel Under Eastern Ontario Climatic Conditions	J.R. Gillespie

FOOD AND FOOD QUALITY

Project	Researcher
Recipe Development for Milk-Fed Veal	P.L. Johnson
New Product Development - Replacement of Rice with Hull-Less Oats	P.L. Johnson
Sensory Evaluation of White Veal on Energy-Supplemented Fluid Skim Milk Diets	P.L. Johnson
Sensory Evaluation of Strawberry Varieties	P.L. Johnson

New Liskeard College of Agricultural Technology

ANIMAL PRODUCTION

Beef

Project	Researcher
Performance of Beef Steers on Formic Acid Treated Haylage vs Wilted Silage with Various Levels of Concentrate	W.E. Pollock
Red Veal Production	W.E. Pollock

Swine

Project	Researcher
Evaluation of a Continuous Ventilation System for Swine	J.D. Campbell
Hull-Less Oats as a Feedstuff for Swine	J.D. Campbell, W.E. Pollock

Sheep

Project	Researcher
Feedlot Performance of Wether Lambs vs Ram Lambs	K.M. Dupchak
The Use of Aureomycin 50 in Lamb Creep Feed	K.M. Dupchak
Estrus Synchronization in Sheep	K.M. Dupchak, W.E. Pollock
Effect of Level of Nutrient Availability on Carcass Characteristics of Market Lambs	K.M. Dupchak S.D.M. Jones

FIELD CROPS

Grain

Project	Researcher
he Development of Early Inbred Lines of Corn for the Future Use of Hybrid roduction for Northern Ontario	A.V. Skepasts
ilage Corn Performance Test	A.V. Skepasts
Cereal Cultivar Project	A.V. Skepasts
Intensive Barley Production	A.V. Skepasts, J.G. Rowsell
Nitrogen Additions from Legume Species Plowed Down to Subsequent Barley Crops	A.V. Skepasts, J.G. Rowsell

Forage

Project	Researcher
The Effect of Time of Application of Certain Rates of Nitrogen on Dry Matter Production of Bromegrass	A.V. Skepasts
Early and Standard Alfalfa Cultivar Test	A.V. Skepasts
Legume Inoculation Trial	A.V. Skepasts
Medium Alfalfa Licensing Trial	A.V. Skepasts
Bromegrass Responses to Progressively Higher Rates of Nitrogen Fertilizer	A.V. Skepasts
Early Medium and Late Grasses for Production in Legume Mixtures	A.V. Skepasts
Dry Matter Production of Forage Grasses to Progressively Higher Levels of Nitrogen While Using Ammonium Nitrate and Urea	A.V. Skepasts
Seed Coating and Seeding Rate for Establishment of Alfalfa on Medium Acid Soils	A.V. Skepasts, J.G. Rowsell
Forage Fertility Project	A.V. Skepasts, J.G. Rowsell
Effect of Row Width and Seeding Rates on Seed Production of Birdsfoot Trefoil	A.V. Skepasts
Effects of Potassium Carbonate Application on Alfalfa	W.E. Pollock

Protein and Oilseed

Project	Researcher
Oilseed Cultivar Project	A.V. Skepasts
Western Cooperative Field Pea Test	A.V. Skepasts

HORTICULTURAL CROPS

Project	Researcher
The Development of Industry Based Cultivated Medicinal and Other Herbs in Northern Ontario	A.V. Skepasts, B. Hughes
The Evaluation of Cole Crop Cultivars Planting Dates and Planting Methods for Northern Ontario	B. Hughes
Sweet Corn Planting Date Test	B. Hughes

SOIL AND WATER MANAGEMENT

Project	Researcher
Tillage Requirements for Fine Textured Northern Ontario Soils	A.V. Skepasts, J.G. Rowsell
Changes in Surface Soil pH as a Result of Growth of Forages	J.G. Rowsell

PEST MANAGEMENT AND DISEASE CONTROL

Project	Researcher
Evaluation of Fusilade and Related Herbicides	A.V. Skepasts

Ridgetown College of Agricultural Technology

ANIMAL PRODUCTION

Beef

Project	Researcher
Growth Rate and Feed Efficiency Improvers for Feedlot Cattle	D.A. Murray
Development of Intensive System (Management) for Beef Cows	D.G. Luckham
Energy and Protein Levels for Bred Yearling Heifers	D.A. Murray

Dairy

Project	Researcher
Feeding Program for Lactating Dairy Cows	D.A. Murray

Swine

Project	Researcher
Feeding Programs for Growing Pigs	J.R. Morris
Management System for Swine	J.R. Morris
Housing the Growing Pig (Swine Structures and Environment)	J.R. Morris
Specific Swine Industry Problems	J.R. Morris

FIELD CROPS

Grain

Project	Researcher
Cereal Varieties and Management	A.E. Smid
Hybrid Evaluation for Grain and Forage	A.D. McLaren
Production Studies in Grain Corn	A.D. McLaren
Nitrogen and Nitirification Inhibitor Research with Corn	C.K. Stevenson
P and K Maintenance Research with Corn	C.K. Stevenson
Nitrogen and N-serve Reserve - Winter Wheat	C.K. Stevenson
Maximum Yield Research with Corn	C.K. Stevenson
Tillage and Fertility Studies - Corn	C.S. Baldwin
Farmyard Manures and Corn Production	C.S. Baldwin
Corn and Legume Interseeding	C.S. Baldwin
Shelterbelt Protection and Corn Growth and Yield	C.S. Baldwin
Tissue Analysis for Nutrient Content as Affected by Various Fertilizer Practices (N and P)	J.H. Brimner
Determination of Variations in Protein Levels of Some Corn Hybrids	J.H. Brimner
Tissue Analysis for Nutrient Content	R.W. Johnston
Rates and Kinds of Limestone for Clay Soils	R.W. Johnston

Forage

Project	Researcher
Forage Varieties and Management	A.D. McLaren

Protein and Oilseed

Project	Researcher
Evaluation of Field Bean Types and Cultivars	G.R. Ablett
Cultural Studies in Field Beans	G.R. Ablett
Evaluation of Soybean Cultivars	G.R. Ablett
Cultural Studies in Soybeans	G.R. Ablett
P and K Maintenance Research with Soybeans	C.K. Stevenson
Soil Test Calibration Research with Soybeans	C.K. Stevenson
Maximum Yield Research with Soybeans	C.K. Stevenson
Soybean Yields as Affected by Previous Management Practices 1939 to 1973	C.S. Baldwin
Soil Test Calibration - White Beans	C.S. Baldwin

HORTICULTURAL CROPS

Project	Researcher
Performance and Hardiness Testing of Tender Fruits, Grapes and Apple Varieties in Kent County	J.K. Muehmer

Project	Researcher
Cultivar Testing and Evaluation of Processing and Greenhouse Tomatoes	J.K. Muehmer
Cultural and Management Studies - Tomatoes	J.K. Muehmer
Breeding, Cultivar Testing and Management Studies in Processing Peppers	J.K. Muehmer
Cultivar Testing and Management Studies - Cole and Small Acreage Crops	J.K Muehmer
Cultivar Testing and Management Studies of Various Greenhouse Vegetable Crops	J.K. Muehmer

WASTE MANAGEMENT

Project	Researcher
Composted Sewage Sludge - Corn	C.S. Baldwin

PEST MANAGEMENT AND DISEASE CONTROL

Project	Researcher
Foliar Disease Control in Field Crops	J.M. Bodnar
Seedling Decay & Root Rots in Field Crops	J.M. Bodnar
Foliar Insect Control in Field Crops	J.M. Bodnar
Effect of Herbicides on Weed Control in Corn	R.H. Brown
Effect of Herbicides on Weed Control in Vegetable Crops	R.H. Brown
Effects of Herbicides on Weed Control in Burley Tobacco	R.H. Brown
Studies in Control and Biology of Velvet Leaf	R.H. Brown
Pesticide Application Techniques in Horticultural Crops	R.E. Pitblado
Disease Control in Horticultural Crops	R.E. Pitblado
Insect Control in Horticultural Crops	R.E. Pitblado
Insect and Disease Control in Field Tomatoes	R.E. Pitblado
Soil Insect Control in Field Corn	R.E. Pitblado
Herbicides for Specific Weed Problems	C.J. Swanton
Effect of Herbicides on Weed Control in Cereals and Alfalfa	C.J. Swanton

Project	Researcher
Weed Control in Special Vegetable Crops	C.J. Swanton
Weed Control in Potatoes	C.J. Swanton
Weed Control in Lima Beans	C.J. Swanton
Weed Control in Soybeans	C.J. Swanton
Weed Control in White Beans	C.J. Swanton
Weed Control in Kidney Beans	C.J. Swanton

ECONOMICS

Project	Researcher
Farm Financial Management	W.R. Allen
Economic Evaluation of Alternate Energy Sources	W.R. Allen
Weed Losses Study	W.R. Allen
Comparison of Tomato Planting Techniques	W.R. Allen
Pea Harvester Evaluation Study	W.R. Allen
Analysis of Land Leasing and Renting	R.W. Ross
Fresh Market Vegetable Price Projection Model	R.W. Ross
Potential for Computer Use on the Farm	R.W. Ross
Land Pricing Analysis	R.W. Ross
Software Development for On Farm Computers	R.W. Ross

ENGINEERING

Project	Researcher
Direct Seeding of Tomatoes Using Anticrustant and Injection	R.V. Jung
On-Farm Solar Collectors	R.V. Jung
Heat Exchangers for Livestock Housing	R.V. Jung
Iron Oxide Problems in Sub Surface Drains	M. Sojak
Automatic Control of Ventilation Air Inlets	M. Sojak
Damage to Plastic Drains with Wheel Trencher	M. Sojak
Cooling of Ventilation Air	M. Sojak

University of Guelph

Project	*Researcher*
ANIMAL PRODUCTION	
Beef	
The Effect of Nutrition on the Acute Pulmonary Edema and Emphysema Induced by 3-Methylindole	T.M. Bray, J.C. Merrill, S. Kubow, J. Kirkland
Corn Silage Studies: Value of Nitrogenous Additives and Agronomic and Ensiling Consideration that Affect Nutritive Value	J.G. Buchanan-Smith
Growth Promotants for Livestock	T.D. Burgess, S.D. Jones, R.J. Etches
The Effect of Feedlot Reception Procedures on Feeder Calf Performance	T.D. Burgess, R.A. Curtis, J.G. Buchanan-Smith
The Role of Carcass Composition on Meat Quality in Beef Cattle	S.D.M. Jones, J.W. Wilton, J.G. Buchanan-Smith, R. Rompala, C.R. Haworth, E.A. Gullett
The Production of Beef Using Culled Cows	S.D.M. Jones, G.K. MacLeod
Breed X Castration Interactions in the Feedlot	S.D.M. Jones, T.D. Burgess, J.W. Wilton
Growth and Carcass Characteristics of Large, Late-Fattening Steers on Different Feeding Systems	S.D.M. Jones, J.G. Buchanan-Smith J.W. Wilton, J.H. Burton R.E. Rompala
Investigation of Factors Affecting Fertility in Beef Cows	G.J. King, J.S. Walton
Effect of Lasalocid Sodium on Feedlot Performance of Beef Steers	G.K. MacLeod, J.G. Buchanan-Smith
Effect of Salinomycin on Performance of Feedlot Cattle	G.K. MacLeod
Systems Utilizing Crop Residues for Feed	D.N. Mowat, D. Ganesh
Systems of Producing Leaner Beef	D.N. Mowat, T. Forster
An Investigation of the Major Factors Influencing Beef Tenderness	D.W. Stanley, S.D.M. Jones
The Economic Importance of Cow Size and Milk Yield	J.W. Wilton, S. Jones
Effect of Breed and Plane of Nutrition on Calf Performance and Reproduction in the Cow	J.W. Wilton, G.K. MacLeod, G. King
Characteristics of Donors and Recipients Influencing the Efficiency of Beef Production Through Embryo Transfer	J.W. Wilton, J. Reid, J.S. Walton, K.E. Leslie
Improving Beef Cattle Testing Programs	J.W. Wilton, L. Schaeffer, H. Song
Grain Mycotoxins in Diets of Ruminants	L.G. Young, L.G. McGirr, J.H. Lumsden, V.E. Valli, D.G. Grieve, E.T. Moran
Pharmacological Studies of Hypersensitivity, Inflammation and Associated Homeostatic Mechanisms in Domestic Ruminants, with Particular Reference to Pulmonary Disease	P. Eyre, A.A. Norris, M.K. Mirbahar, R.J. Perron, P. Autenried, F. Bakunzi, I. Alexander, D. Cheung, P.J. Elmes
Correlative Light Microscopy (LM), Scanning Electron Microscopy (SEM) and Transmission Electron Microscopy (TEM) of Muscular Dystrophies	H.D. Geissinger, L.E. Becker, C. Knipe
The Pathophysiology of Fibrinous Pneumonia in Cattle	M.G. Maxie, J.H. Lumsden, V.E. Valli, P. Eyre, P. Carriere
Studies on the Spread of H. Somnus in a Naturally Infected Cow-Calf Herd	P.B. Little, D.A. Barnum, J. Thorsen, J. Humphrey, R. Glover
The Significance of High Serum Bilirubin Values in Cattle	B.J. McSherry, J.H. Lumsden, J. Baird
The Transfer of Immunoglobulins in Association with Placental Pathology in Cattle and Sheep	R.B. Miller, B.J. Poitras
Comparison of Bovine Enteropathogenic E. Coli and Porcine Atypical Enteropathogenic E. Coli	C.L. Gyles, N. Harnett
Factors Associated with Disease, Death and Productivity in Feeder Cattle Following Entry into the Feedlot	S.W. Martin, A.H. Meek, S. Rosendal, R.A. Curtis, J.F. Prescott, D.A. Barnum, J.A. Johnson
To Develop a System of Monitoring Chloramphenicol in Slaughtered Calves	W.R. Mitchell, T. Feltmate
Host Resistance to Pasteurella Haemolytica	B.N. Wilkie, P.E. Shewen
Dairy	
Effects of Dairy Heifer Calf Sickness on Future Productivity Performance	J.B. Britney, W. Martin, J.H. Clark, J.B. Stone, I. McMillan, E.B. Burnside, R.A. Curtis
Nutritive Value of Alfalfa Silage	J.G. Buchanan-Smith
Relationship Between External Rump Measurements and Calving Difficulties in Canadian Dairy Cattle	E.B. Burnside, L.R. Schaeffer
Development of an Automated System of Measuring Milking Speed in Dairy Cows	E.B. Burnside, L.R. Schaeffer, A.M. McClelland

Project	*Researcher*
Evaluation of Holstein-Friesian A.I. Sires for Stillbirths and Ease of Calving	E.B. Burnside, L.R. Schaeffer, R.A. Cady, M.G. Freeman
Crossbreeding Programs for Beef Production on a Dairy Farm	E. Burnside, J.W. Wilton, W.C. Pfeiffer, P. Rozzi
An Investigation into the Nature, Prevalance and Significance of Congenital Factor XI Deficiency in Cattle	P.A. Gentry, W.D. Black
A Pharmacological Study of Cutaneous Vasculature in the Calf	P. Eyre, K. Eghianruwa
Platelet and Prostaglandin Involvement in Allergic/Inflammation Reactions of Bovine Lung	F. Lotz, P. Eyre
Cattle Twinning and Intersex Development: A Model of Freemartinism	J.I. Raeside
Measurement of Estrone Sulphate in Milk as a Method for Early Confirmation of Pregnancy in Cows	J.I. Raeside, J.S. Walton, W.T. Bosu
Development of the Procedures for Electron Microscopy of Animal Tissues Collected for Light Microscopy	S. Yamashir, H.D. Geissinger
The Effect of Experimental P13 and P. Haemolytica Infection on Neutrophil Function in the Calf	J.H. Lumsden, M.G. Maxie, V.E. Valli, P. Carriere
Monocyte Kinetics in Normal and Pneumonic Calves	M.G. Maxie, S. Al-Izzi, J.A. Johnson, V.E. Valli
Control of the Infectious Agents Causing Bovine Mastitis	D.A. Barnum, A.H. Meek, M.F. Vizmanos, B. Brooks
Total and Differential Somatic Cell Counting in Milk for the Control of Bovine Mastitis	D.A. Barnum, A.H. Meek M.F. Vizmanos B. Brooks
Studies on Enterotoxigenic E. Coli Diarrhea in Colostrum Fed Calves. Part V. Efficacy of Current Treatment Regimes	D.G. Butler, C.L. Gyles, M.R. Wilson
Detection of E. Coli Enterotoxin in the Feces of Calves with E. Coli Diarrhea	C.L. Gyles, L. Araya-Sanchez
Development of a Vaccine Against Salmonella Typhimurium in Cattle	C.L. Gyles, D.G. Butler, R. Clarke
Improved Methods for Detecting BVD Infection and Immunity in Cattle Using the Elisa Technique	G.N. Lang, M. Savan
Monitoring Disease and Production in Dairy Cattle: A Pilot Project Based on Milk Analysis and Recording of Clinical Disease	S.W. Martin, A.H. Meek, I.R. Dohoo
Identification and Antimicrobial Susceptibility of Anaerobic Bacteria in Chronic Pneumonic Conditions in Cattle	J.F. Prescott, M. Chirino-Trejo
Urine Clearance Studies	J.D. Baird, A.O. McKinnon, J.H. Lumsden, D.G. Butler

Project	*Researcher*
Investigations into Control of Ureaplasma Contamination in Bovine Semen	W.T.K. Bosu, H.L. Ruhnke
Antigens and Antibodies of Importance in Brucellosis in Cattle	I.R. Tizard
The Effect of GNRH and/or Prostaglandin on the Early Post Partum Dairy Cow	W.G. Etherington, W.T. Bosu, P.A. Doig, S.W. Martin, J.F. Cote, K.E. Leslie
Respiratory Function Studies in Cattle with Repiratory Disease and Relationship to Milking Performance	W. McDonell, J. Gallivan, J. Baird
The Relationship Among Current Management Systems, Production, Disease and Drug Usage in Dairy and Swine Herds	M.R. Wilson, J.B. Britney, A. Butler, R.R. Hacker, S.W. Martin, I. McMillan, A.H. Meek, J.B. Stone, S.S. Swaminathan
To Study the Toxicology of Topically Applied Organo-Phosphates in the Bovine	W.D. Black
Study of the Effects of Ethionine Induced Fatty Liver on Biotransformation Processes in the Liver	W.D. Black, H.J. Boermans
The Flora and Sensitivity Pattern of Microorganisms in Bovine Semen in Ontario	N.A. Fish, S. Rosendal
Poultry	
The Control of Ovulation in Domestic Birds	R.J. Etches
Strain, Strain Cross, and Age Effects on Profits in Producing Eggs	G.W. Friars
Carcass Composition of Commercial Broilers	G.W. Friars
Pilot Studies of Index Selection Progress	G.W. Friars
Egg Quality Studies	E.C. Hunt, H.L. Orr, L. McEwan, K. Ewan, E. Ferguson
Nutirition and Management of the Pullet	S. Leeson
Development of Feeding Systems for Poultry	S. Leeson
Efficacy of Antibiotics, Growth Promotants and Coccidiostats for Poultry	S. Leeson
Nutrition and Management of Meat Turkeys to Improve Their Commercial Value	E.T. Moran
Feeding Breeder Turkeys to Maximize Performance and Minimize Fat	E.T. Moran, P. Ferketquit
Factors Affecting Feed Efficiency in the Laying Hen	W.D. Morrison
Meat Yields and Composition of Various Kinds of Poultry	H.L. Orr, E.C. Hunt
Breeding Program for Genetic Stocks Maintained in Small Populations	B.S. Reinhart, G.I. Hurnik

Project	*Researcher*
Factors Influencing the Hatchability of Eggs from Commercial Sources	B.S. Reinhard, E.T. Moran, G.I. Hurnik
Nutrient Requirements of Growing Pullets and Laying Hens	J.D. Summers
Protein Evaluation	J.D. Summers
Toxic Effects of Methyl Mercury on the Reproductive Organs of Domestic Chickens and Ducks	M.K. Bhatnagar, S. Blachandran
Ultrastructural Studies on the Liver of Domestic Avian Species. I. Establishment of Normal Morphometric Parameters II. Hepatoxicity of Methylmercury	M.K. Bhatnagar, O.E. Vrablic, S. Yamashiro
Estrogen-Induced Vitellogenesis in Poultry	A.M. Gibbins
The Nerve-Muscle Relationship in the Leg of Normal Broiler Chickens	G.D. Partlow
Iodide Metabolism and the Transference of Minerals to the Oocytes and Embryos of Poultry	G.A. Robinson, A.M. Gibbins
Egg Yolk Protein Synthesis in Poultry	A.M. Gibbins
Host-Parasite Interaction in the Coccidia - Pathogenic Mechanisms Involved in the Disease Caused by Coccidial Parasites	M.A. Fernando
Investigation into the Causes of Production Drops, Failure to Peak and Poor Egg Production in Chicken and Turkey Layer and Breeder Flocks	R.J. Julian, A.E. Ferguson, G. Lang, M. Joyce
Studies on Lameness and Leg Problems in Broiler Chickens and Turkeys	R.J. Julian, A.E. Ferguson, J. Summers, S. Leeson
Control of Salmonella Contamination of Poultry	D.A. Barnum, W.R. Mitchell, W. Anderson, C. Reid
An Epidemiology Study of Factors in Poultry and Their Products Associated with Specific Abnormal Flavour and Taste	N.A. Fish
The Immune Response of Turkeys to Hemorrhagic Enteritis Virus (HEV)	J. Thorsen
A Study of the Elisa Test for Serodiagnosis of Avian Encephalomyelitis and Turkey Herpesvirus Infections	G. Lang, M. Lwin
Investigation into Health Problems of Ontario Turkey Breeding Enterprises Caused by Sporadic and Enzootic Myxovirus Infections	G.N. Lang
An Investigation of a Paramyxovirus Enzootic in Breeding Turkeys, of its Role in Production Problems and of Possible Means for Control or Eradication of the Viruses from the Infected Premises	G. Lang
Significance of Finish on the Turkey Carcass to its Cooking Characteristics and Yields	E.T. Moran
Toenail Clipping Turkeys as a Means to Reduce Undergrades	E.T. Moran

Project	*Researcher*
Swine	
Implication of Alternative Marketing Strategies for the Pork Industry	G.H. Bowman, L. James
Determination of the Effects of Exercise on the Performance of Sow and Piglets	R.R. Hacker, S. MacLachlan
The Effect of Environment on the Abosrption of Immunoglobulins by the Newborn Piglet	R.R. Hacker, L. Bate
Ingestive Behaviour of the Neonatal Piglets	J.F. Hurnik, H.W. Chapman, R.R. Hacker, L.G. Young
Prediction of Carcass Yield and Quality in Market Hogs	S.D. Jones, R.R. Hacker
Genetic Improvement of Swine Through Performance Records and Artificial Insemination	B.W. Kennedy, K. Johansson
The Influence of Group vs Individual Penning on Behaviour, Feed Conversion, Soundness, Growth and Puberty in Pigs	B.W. Kennedy, R.R. Hacker, C. Darcy, S. Joyal
Initiation of Estrus in Sows and Gilts	G.J. King, J.S. Walton, W.T. Bosu
Effect of Diet on Alleviaton of Toxic Effects and Tissue Residues of Fusarium Mycotoxins in Swine	T.K. Smith, L.G. McGirr, K.E. Stangroom
Causes, Detection and Amerlioration of Meat, With Abnormally High or Low pH	H.J. Swatland
Endocrine Regulation of Ovarian Function in Sows	J.S. Walton
Grain Mycotoxins in Diets of Pigs	L.G. Young, L.G. McGirr, G.J. King, J.H. Lumsden, V.E. Valli, E.T. Moran, J.S. Walton
Nutrition and Management of Pigs for for Reproduction	L.C. Young, G.J. King, J.S. Walton
Triticale in Diets of Pigs	L.G. Young, V. Poysa, E.R. Reinbergs
Correlates of Morphologic Studies in Normal and Experimentally Altered Parathyroid Gland with Ozone Inhalation: Autoimmune Mechanism, Angiogenesis, etc.	O.S. Atwal, R.S. Pemsingh
Detection of Carrier State of Porcine Stress Syndrome (PSS)	P.K. Basrur, S. Frombach
Mathematical Model of Oxytetracycline Residues in Swine Tissues	W.D. Black, R.D. Gentry
The Effects of Pentachlorophenol (PCP— Residues in Animal Bedding on the Skin of Young Pigs	M.H. Fallding, W.R. Brown
A Study of Vascular Stress in Swine	H.G. Downie
An Investigation of the Influence of Circulating Levels of Steroid Hormones on the Coagulation Profile of Domestic Animals	P.A. Gentry, R.M. Liptrap
Pathogenesis of Mycotoxins in Domestic Animals	P.A. Gentry

Project	*Researcher*
Correlative Uterine Microscopy and Plasma Steroid Levels in Lactating Sows and Sows with Experimentally Induced Cystic Ovaries	H.D. Geissinger, P.A. Rhodes
Mechanism of Cystic Ovary Development in the Sow	R.M. Liptrap, A.T. Peter
Hormonal and Pathological Aspects of Porcine Parvovirus in Pregnant Sows	R.M. Liptrap, P. Meyers
Control of LH and Testosterone in the Pig	R.M. Liptrap
Interrelationship of Progesterone and Prostaglandin F2a in the Metritis-Mastitis-Agalactia (MMA) Syndrome in Post-Partum Sows	R.M. Liptrap
Incidence and Anatomical Description of Birth Defects in Swine	G.D. Partlow, K.R. Fisher, D.E. Barrales
Development and Function of Steroid Biosynthesis in the Fetal Testis of the Pig	J.I. Raeside
Determination of Plasma Levels of Steroid Hormones with Emphasis on Steroid Sulphates and on a Local Transport System for Androgens in the Boar	J.I. Raeside
Steroid Biosynthesis in the Testes of the Boar	J.I. Raeside, R.M. Liptrap
Morphological Analysis of Liver from Pigs Fed Various Types of Fat	A. Singh, S. Yamashiro
Intrinsic Arteries of the Porcine on Stress-Susceptible Pigs	R.D. Whiteford
Histochemical and Morphometric Studies on Stress-Susceptible Pigs	T.J. Hulland
Serotype Associated Virulence Factors in Porcine Salmonellosis	B.P. Wilcock
Escherichia Coli Enterotoxin Plasmid Mutants as Vaccines	C.L. Gyles
Tissue Residues in Normal and Diseased Animals Following Chloramphenicol Treatment	W.D. Black, J.R. Nelson, D.J. Campbell, P. Eyre, D.A. Barnum
Antibody-Dependent Cell-Mediated Cytotoxicity (ADCC) and Natural Killer (NK) Cell Activity in Porcine Transmissible Gastroenteritis (TGE)	J.B. Derbyshire, A. Cepica
The Immunogenicity of the Polypeptides of Porcine Parvovirus	J.B. Derbyshire, J.A. Lynch
Pleuropneumonia of Pigs Caused by Haemophilus Pleuropneumoniae	S. Rosendal, L. Lombin, W. Mitchell, K. Gilbride, M. Wilson
Intestinal Disorders: Pathogenesis of Acute Viral Diarrhea Using T.G.E. of Piglets as a Model: Intestinal Glucose Transport	D.G. Butler, J.R. Hamilton, H. Rooyakers
A Survey of Selenium and Vitamin E Levels in Feed and Body Tissues of Pigs on Ontario Farms	R.M. Friendship
Response of Young Pigs to Immunization Against Common Swine Pathogens	O.P. Miniats, D. Carpenter

Sheep and Goats

Project	*Researcher*
Metabolic and Morphologic Basis of Pulmonary Alveolar-Capillary Permeability and Detoxification of Metabolites in Domestic Ruminants	O.S. Atwal
The Effects of Different Feeding and Management Factors on Blood Flow to the Brain and Rumino-Reticular Motility	A.R. Graham
The Control of Food Intake and Gastro-Intestinal Functions in Sheep - A Model Ruminant	W.L. Grovum, H.W. Chapman
Interaction of Parasitic and Microbiological Agents in Pneumonia of Goats and Sheep	B.M. McCraw, S. Rosendal, S. Watson
Analysis of Variables in Ecdysis, Growth, and Development of Immature Strongylata I. Haemonchus Contortus II. Strongylus Vulgaris	J.O. Slocombe, M.W. Clarke
The Prevention of Infection with Bovine Leukemia Virus by Specific Immunization	V.E. Vallie, J.B. Derbyshire, I. Tizard, A.C. Hollinshead, J.M. Miller, T. Stirtzinger, A. Hayes
The Epidemiology and Etiology of Spontaneous Nasal Adenocarcinoma in Sheep	V.E. Valli, J. Thorsen, A. McKinnon, T. Stirtzinger, A. Hayes
Neutrophil Function in Sheep Experimentally Infected with Bovine Lymphosarcoma Virus and in Cattle with Clinical Evidence of Tumor	A. Walker, V.E. Valli, J.A. Johnson, J.H. Lumsden, B.J. McSherry, T. Stirtzinger
Stimulation of Protective Immunity Against Corynebacterium Pseudotuberculosis	C.L. Gyles, A. Muckle
Toxic Effects of Mycoplasmas and Mycoplasma Fractions	S. Rosendal, A. Valdivieso-Garcia
Investigation of a Vaccine for the Prevention of Caseous Lymphadenitis (Field Trial)	C.A. Barker
Superovulation and Ovum Transfer in Goats	W.T.K. Bosu, R. Stubbings, C.A.V. Barker, G. King
Studies on Enterotoxemia in Goats: Systemic Immune Response and Local Inflammatory Reaction to Vaccination with a Bacterin-Toxoid Vaccine Containing Clostridium Perfringens C and D	D.G. Butler, J. Bell, T. Blackwell
Studies on Enterotoxemia in Goats: Experimental Production of Enterotoxemia in the Mature Goat	D.G. Butler, T. Blackwell, J. Prescott, H. Chapman

Fish

Project	*Researcher*
Studies of Carbohydrate as an Energy Source in Trout Diets	J.L. Atkinson, J.W. Hilton, S.J. Slinger
The Effect of pH and Starvation on Reticuloendothelial Clearance in Rainbow Trout	H. Ferguson
Bacterial Gill Disease in Rainbow Trout	H.W. Ferguson, S. Goldes

Project	*Researcher*
Interrelationships of Vitamins with Other Nutrients in Diets for Rainbow Trout	J.W. Hilton, S.J. Slinger
Mineral Requirement Studies in Rainbow Trout	J.W. Hilton
Riboflavin Supplementation of Practical Diets for Rainbow Trout and Methods of Assessing Riboflavin Status in the Trout	W.D. Woodward
The Effect of Vomitoxin on Young Rainbow Trout Fed a Practical-Type Diet	W.D. Woodward, L.G. Young

Bees

Project	*Researcher*
Physiological Indices of Nectar Potential in Forage Legumes	R.W. Shuel
Selection for High Nectar Potential in Alfalfa and Birdsfoot Trefoil	R.W. Shuel
Selection for Ease of Tripping and High Nectar in Alfalfa	R.W. Shuel

Other

Project	*Researcher*
Placental Transfer and Teratogenic Characteristics of Selected Chemicals Found in the Great Lakes Basin	W.D. Black
Nephrotoxicity of Methylmercury in Domestic and Wild Waterfowl	M.K. Bhatnagar, M.S. Snelgrove-Marsh
Dermal-Epidermal Interactions in Health and Disease	M.H. Hardy Falling, W.R. Brown, E. Goldberg
Hypophyseal Intermediate Lobe Colloid: A Transport System	W.H. Boyd
A Study of the Development of Maleness in Fetuses: Testicular Development and Leydig Cell Population Dynamics	K.R.S. Fisher, D. Vandeloo
Effects of Steroid Hormones on Skeletal Muscle in Tissue Culture	H.D. Geissinger, S. Yamashiro
Brown Adipose Tissue: A Physiological and Morphological Study	W.H. Harris, S. Yamashiro, L. Moore
The Effects of Anti-Inflammatory Drugs on Uterine Motility and Force of Contraction	W.H. Harris
Platelet Function in Domestic Animals: Physiological and Pathological Variations	I.B. Johnstone
The Role of the Fetus in the Hormonal Regulation and Gestation in the Horse	J.I. Raeside, R.M. Liptrap, F.J. Milne, N.A. Gofton
Ultrastructural Examination of the Liver, Testis and Thyroid of Rats Treated with Photomirex or Mirex	A. Singh
Wildlife Disease Surveillance	I.K. Barker, R.J. Julian
Campylobacter Jejuni Infections	J.F. Prescott
Transmission and Pathogenesis of Haemoproteus Infection	R.J. Julian
The Peroxisome: A Freeze-Fracture Study	A. Singh
Surveillance of Laboratory Animal Diseases	D. Percy
SDA: An Important Coronavirus Infection in the Rat	D.H. Percy
Surveillance of Diseases in Laboratory Animals	D.H. Percy
A Pilot Survey of Pasteurella Serotypes Present in Rabbits in Ontario	D.H. Percy, J.F. Prescott
Surveillance of Parasitic Diseases of Domesticated Animals in Ontario	J.O. Slocombe
Experimental Oncology	V.E. Valli, J. Patterson, A. Norris, T. Stirtzinger
Clinical Quantitation of Chronic Obstructive Pulmonary Disease in the Horse	V.E. Valli, W.N. McDonell, J. Thorsen, P. Eyre, R.A. Willoughby, L. Viel
Control of Strangles in Horses by Immunization	D.A. Barnum, S. Srivastava
Corynebacterium Equi Infections in Foals	J.F. Prescott, J.A. Johnson
Investigation of Canine Humoral and Cell Mediated Immune Response Following Intestinal or Parenteral Administration of Modified Live, Inactivated or Sub Unit Rabies Vaccine	B.N. Wilkie, J.B. Derbyshire, F. Depauli
Aleutian Disease in Mink	B.N. Wilkie, P. Wright, C. Prescott
Pseudomonas Vaccination in Mink	B. Hunter, J.F. Prescott
Assessment of Cardiac Function in the Horse Showing Limited Exercise Tolerance Utilizing the Techniques of Vector-Cardiology and Computer Analyses	P.W. Physick-Sheard

FIELD CROPS

Cereals

Project	*Researcher*
Quality and Yield of Corn Silage	T.B. Daynard, J.C. Jofriet, J. Buchanan-Smith
Inter-Plant Competition in Corn	T.B. Daynard
Quality in Ontario Grain Corn	T.B. Daynard
Genotypic and Environmental Effects on Grain Filling and Grain Maturity in Corn	T.B. Daynard, M. Reddy, V. Castro, B. Baron, D. Bagnara
Effects of Crop Sequence on Soil Structure, Stability, and Productivity	T.B. Daynard, J.W. Ketcheson, A. De St. Remy, T. Vyn
Production Studies on Barley and Oats	E.E. Gamble
Testing New Improved Varieties of Cereals	L.A. Hunt, E. Reinbergs, A. Smid, G. Hoekstra, V. Burrows, A. Skepast, K.M. Ho, D. Sampson, A. Teich
Breeding New and Improved Varieties of Winter and Spring Wheats	L.A. Hunt, W.N. Migus, M. Vander Poorten, I. Aguilar
Nitrogen Requirements for Whole-Plant Corn Silage Grown at High Plant Densities	R.B. Hunter, E.G. Beauchamp
Ear Mold and Mycotoxins in Corn	G.B. Hunter, G. Atlin

Project	*Researcher*
Development and Evaluation of Corn Breeding Techniques	R.B. Hunter, L.W. Kannenberg
Evaluation of Corn Hybrids	L.W. Kannenberg, R.B. Hunter
Development and Improvement of Corn Breeding Populations and Inbreds	L.W. Kannenberg, R.B. Hunter
Cytogenetic Studies in Cereals	K.J. Kasha, E. Reinbergs, L.A. Hunt, D.E. Falk, K. Falk
Crop Improvement Through Plant Cell and Tissue Culture	K.J. Kasha, D.T. Tomes, L. Kott, G. Anderson, B.E. Ellis, R.L. Peterson, A. Ziauddin
Haploid Production and Utilization in Cereals	K.J. Kasha, E. Reinbergs, L. Kott, G. Wheatley, D. Falk, A. Marsolais, D. Deslauriers
Winterhardiness of Winter Cereals	B.D. McKersie, L.A. Hunt, E. Reinbergs, K. Tanino
Aerobic Stability of High Moisture Grain Corn	B.D. McKersie
Breeding Improved Varieties of Spring Barley	E. Reinbergs, M. Sc Student, K. Kasha, C. Anderson, L.V. Edgington
Breeding Improved Varieties of Winter Barley	E. Reinbergs, A. Smid
Breeding Improved Varieties of Oats	E. Reinbergs, G.W. Anderson, V. Burrows
Breeding Improved Varieties of Winter Triticale	E. Reinbergs, L. Young, V. Poysa, A. Smid, A. Skepasts, G. Hoekstra

Forages

Selection for Forage Yield in Grasses	B.R. Christie
Alfalfa-Breeding for Pest Resistance	B.R. Christie
Selection for Winter-Hardiness and Longevity in Alfalfa	B.R. Christie
Selection for Digestibility and Protein in Forages	B.R. Christie, A. McElroy, P. Teetch
Selection for Yield Per Se in Alfalfa	B.R. Christie
Forage Cultivar Evaluation	B.R. Christie, D.T. Tomes
The Relationship of Autumn Managements to Persistence and Succeeding Yield in Perennial Forages	R.S. Fulkerson
Methods of Hay Preservation	R.S. Fulkerson
Evaluation of Forage Crops and Production Practices	R.S. Fulkerson
Forage Seed Production Studies	R.S. Fulkerson
Seed Production tudies in Birdsfoot Trefoil and Perennial Ryegrass	E.E. Gamble
Winterhardiness of Perennial Forages	B.D. McKersie

Project Title	*Researcher*
Protein Degradation in Ensiled Alfalfa Forage	B.D. McKersie, J. Buchanan-Smith, Y. Papadopoulos
Evaluation of Factors Contributing to Seedling Vigour and Establishment of Birdsfoot Trefoil	B.D. McKersie, D.T. Tomes
Methods for Evaluation Seed Quality in Forage Legumes	B.D. McKersie, D.T. Tomes
Screening Forage Legumes for Tolerance to Wet Soils	B.D. McKersie, D.T. Tomes, G. Navarro
Application of Tissue Culture Technology to Forage Legumes	D.T. Tomes, K.J. Kasha, E.B. Swanson, C. Campbell, B. Orshinsky, B.E. Ellis, R.L. Peterson
Reducing Seed Pod Shatter in Birdsfoot Trefoil	D.T. Tomes, K.J. Kasha
Selection for Seedling Vigour, Competitiveness, and Seed Yield in Birdsfoot Trefoil	D.T. Tomes, K.G. Glover, B.R. Christie
Identification and Breeding of Forage Legume Conservation Crops	D.T. Tomes, B.D. McKersie R.S. Fulkerson, R.B. Hunter
Selection of Alfalfa for Maximum Yields in Shorter Rotations	D.T. Tomes, B.R. Christie
Forage Quality Determination	J.E. Winch
Use of Near Infrared Spectroscopy for Estimating the Quality of Forages	J.E. Winch
Evaluation of Forages for Use in Pasture Systems	J.E. Winch
Pasture Systems	J.E. Winch G.K. MacLeod

Protein and Oilseed

Effects of Genotype and Environment on Quality Aspects of Soybeans and Rapeseed	W.D. Beversdorf, D.J. Hume, M. Cramer, J. Weiss-Lerman
Winter Rapeseed Breeding and Evaluation	W.D. Beversdorf, D.J. Hume, M. Enerson
Whitebean Breeding and Evaluation	W.D. Beversdorf, D.J. Hume
Early Soybean Breeding and Evaluation	W.D. Beversdorf, D.J. Hume
New Management Systems for Field Bean Production	W.D. Beversdorf, D.J. Hume, B. Rennie
Spring Rapeseed Breeding and Evaluation	W.D. Beversdorf, D.J. Hume, J. Weiss-Lerman, L. Erickson
Seed Vigour of Soybeans and Its Relationship to Seedling Emergence, Stand Establishment and Yield	E.E. Gamble, D.J. Hoy, S. Said
Management Systems for Winter Rapeseed	D.J. Hume, W.D. Beversdorf

Project Title	*Researcher*
Testing and Management of Spring Oilseeds	D.J. Hume, W.D. Beversdorf
Improving Nitrogen Fixation in Soybeans	D.J. Hume, W.D. Beversdorf, J. Winter
Improving Nitrogen Fixation in White Beans	D.J. Hume, W.D. Beversdorf, D.L. Smith, J.C. Moxley
Cold Tolerance in Soybeans	D.J. Hume, W.D. Beversdorf
Photosynthetic Rates and Yield Differences in Triazine-Tolerant and Susceptible Brassica SPP	D.J. Hume, W.D. Beversdorf
Peanut Breeding	J.W. Tanner, R. Roy, P. Hucl, M. Saunders

HORTICULTURAL CROPS

Fruit

Strawberry Breeding	W.D. Evans
Raspberry Breeding	W.D. Evans
Raspberry Management	W.D. Evans
Controlled Atmosphere (CA) Storage of Apples	E.C. Lougheed, D.P. Murr, J.T.A. Proctor
Maturity Studies of Ontario Apples	E.C. Lougheed, J.T.A. Proctor
Effect of Pre-Harvest and Post-Harvest Factors Upon the Physiology and Regulation of Fruit Ripening	D.P. Murr, E.C. Lougheed
Responses of Fruit Crops to Environmental Factors	D.P. Ormrod
Production Techniques for Tree Fruits, Particularly Apple	J.T.A. Proctor, E.C. Lougheed

Vegetables

Breeding of Rutabagas and Asparagus	P.M. Harney, I.L. Nonnecke, H. Tiessen, C. Demaisonneuve, C. Deslandes
Breeding and Evaluating Potato Varieties for Ontario	G.R. Johnston, M. Fitts
Controlled Atmosphere for Storage of Vegetables	E.C. Lougheed, D.P. Murr
Rutabaga Seed Production	I.L. Nonnecke, P.M. Harney, H. Kramp
Responses of Vegetable Crops to Environmental Factors	D.P. Ormrod
Factors Influencing the Incidence of Black Speck in Cauliflower Curds	J.W. Riekels
The Incorporation of Vegetable Seeding Technology into Direct Seeding Programs of Black Spruce Reforestation	J. Riekels
Magnesium Nutrition of Greenhouse Vegetables	J. Riekels
Potato Production Practices for Ontario	R.G. Rowberry
Cultural Studies with Field and Greenhouse Vegetables	H. Tiessen
Plastic Mulch Trials	H. Tiessen
Asparagus Variety Improvement and Cultural Practices	H. Tiessen, P. Harney, R.L. Peterson, J. Ryder, S. Khoshla, C. Deslands, A. Humpheries, L. Butler
Influence of Storage Environment on Potato Quality. Study III. Seed Quality and Sprouting	A. Zitnak
Glycoalkaloids as a Quality Factor in Potatoes. Study III. Chaconine in Common Potato Cultivars	A. Zitnak

Ornamentals

Renovation of Turf Areas	J.L. Eggens
The Growth, Culture and Control of Annual Bluegrass	J.L. Eggens, A.C. McTear
Competitive Ability of Turfgrasses	J.L. Eggens
Turfgrasses Species and Cultivar Evaluation	J.L. Eggens
Integrating Greenhouse Control of Lighting, CO_2 and Temperature for Increased Plant Productivity	B. Grodzinski, M.J. Tsujita
The Use of Herbaceous Perennials in Ontario	B. Grodzinski
Breeding and Mass in Vitro Propagation of Flowering Ornamentals	P.M. Harney, I.L. Nonnecke, V. Hildebrandt
Field Production, Handling and Performance of Nursery Stock	G.P. Lumis, C.M. Prager, A.G. Johnson
Container Growing for Woody Plants	G.P. Lumis, A.G. Johnson
Physiology of Cutflowers as Influenced by Environment Prior to, During and After Storage	D.P. Murr, M.J. Tsujita, E.C. Lougheed
Responses of Ornamental Crops to Environmental Factors	D.P. Ormrod
Soil Management for Turfgrass Production	R.W. Sheard
High Intensity Lighting and Commercial Flower Production	M.J. Tsujita, R. Eng
Nutritional Studies of Greenhouse Crops	M.J. Tsujita
Energy Conservation in Greenhouse Flower Production by Environmental Manipulation	M.J. Tsujita

SOIL AND WATER MANAGEMENT

Observation, Compilation and Analysis of Current and Past Weather Records	D.M. Brown, T.J. Gillespie, K.M. King, G.E. Kidd
Assessment of the Potential for Increasing Yields of Field Corn with Irrigation	D.M. Brown, G. Walker, M.H. Miller, R.W. Sheard, H.D. Ayers

Project Title	*Researcher*
Relating Ozone Injury to Dose and Rate of 03 Uptake by Plants	T.J. Gillespie, G.W. Thurtell, B. Amiro, G. Kidd
Development of an Electronic Weather-Monitoring Device for Pest Management	T.J. Gillespie, G.E. Kidd
Determination of Sediment Contributing Areas	D. Clark, T. Dickinson, D. Green
Remedial Strategies for Controlling Sediment Transport	D. Clark, T. Dickinson
Transport, Transformation and Properties of Organic Carbon in Streams Draining Agricultural Land	N.K. Kaushik, J.B. Robinson, G.A. Bird, D.B. Rachar, G. Herrera
Effect of Tillage and Residue Management on Surface Movement of Soil and Water	J.W. Ketcheson, T.J. Vyn
Determination of Soil Erodibility	R. Pall, D. Green, T. Dickinson
The Effect of Agricultural Activities on Groundwater Quality	J.B. Robinson, H.R. Whiteley
Methods to Evaluate the Effects of Pesticides in the Aquatic Ecosystem	K.R. Solomon, N.K. Kaushik, J.B. Robinson, Y.J. Yoo.
Development and Evaluation of Methods for Prediction of Macro and Micronutrient Requirements of Crops	T.E. Bates
Use of Sewage Sludge on Agricultural Lands With Emphasis on Plant Available of Heavy Metals	T.E. Bates
Availability of Manure Nitrogen	E.G. Beauchamp
Reponse of Corn to Nitrogen on Ontario Soils	E.G. Beauchamp
Nitrogen Inhibitor with Preplant Nitrogen Fertilizer Application on Winter Wheat	E.G. Beauchamp, R.W. Sheard, L.A. Hunt, J.C. Sutton
Volatilization of Ammonia from Applied Urea	E.G. Beauchamp, R.W. Sheard, G.W. Thurtell, G.E. Kidd
Water and Chemical Transport in Soils	D.E. Elrick
Effect of Freezing and Thawing on Soil Physical Properties	B.D. Kay, P.H. Groenevelt
Effect of Tillage Practices on Soil Properties and the Growth and Yield of Corn	J.W. Ketcheson, T.J. Vyn, T.B. Daynard, J.H.A. Lee
Effect of Soil Structure and Tilth on Crop Growth	J.W. Ketcheson, B.D. Kay
Soil Factors Limiting Corn Yield in Ontario	M.H. Miller, M. Stypa, A. Nunez-Barrios, I. O'Halloran, W.A. Mitchell, D. Barry
Forage Systems as Nitrogen Sources in Crop Production	R.W. Sheard
Interaction of Soil Drainage, Species and Plant Nutrition	R.W. Sheard
Phosphorus and Potassium Requirements For Alfalfa Production	R.W. Sheard

Project Title	*Researcher*
Winter Application of Manure on Alfalfa	R.W. Sheard
The Relationship of Soil Organic Matter to the Physical Properties of Soil	R.L. Thomas

WASTE MANAGEMENT

Nutrient Recovery from Food Processing Effluents with Microbial Biomass	A.G. Meiering, K.F. Gregory, C. Stevens
Microprocessor Control in Fermentation	A.G. Meiering
Methane Gas Production from Animal Manure	J. Pos, R. Porringa, M. Harvey
The Distribution of Plant Nutrients in Manure Fractions Following Solids Separation, as Affected by Time of Storage	J.B. Robinson, J. Pos
Volatilization of Ammonia from Manure Storage Ponds	J.B. Robinson
Degradation of Cellulose and the Conversion of Cellulosic Waste to Feeds by Mixed Cultures of Microorganisms	R.E. Smith
Evaluation of Alternative Manure-Handling Systems on the Basis of Efficient Use and Retention of Energy and Economic Viability	D.P. Stonehouse, J.S.W. Henderson, J.R. Ogilvie, J. Pos, D.N. Mowat, J.B. Robinson, E.G. Beauchamp, T.H. Lane

LAND USE

Irrigation Water Use - Silver Creek Watershed, Elgin County	H.D. Ayers
Digital Terrain Analysis and Mapping for Erosion Control and Water Management	S.H. Collins
Ontario Farm Real Estate Prices	E.C. Gray, B.E. Prentice
Biophysical Inputs for Rural Land Use Planning	S.G. Hilts
Effect of Land Drainage on Streamflow	R.W. Irwin, H.R. Whiteley, S. Serrano, J. Umpleby
Part-Time Farming in Ontario	J.A. Mage
Study of Absentee Landownership, Phase III	J.A. Mage, G. Brinkman, N.R. Richards
Natural Areas in the Rural Ontario Land Use System	M.R. Moss, R. Milne
An Assessment of the Frequency and Magnitude of Wind Erosion and its Relationship to Soil Type and Systems of Agricultural Production in Southern Ontario	W.G. Nickling
Remote Sensing for Soil Survey, Land Use Inventories and Crop Yield Prediction in Southern Ontario	R. Protz, M.Sc. Student
Soil Criteria and Class Limits for Soil Classification	R. Protz, M.Sc. Student
Micropedologic Characterization of the Major Soil Types in Ontario	R. Protz, M. Shipitalo

Project Title	*Researcher*
Analytical Methods for Rural Land Use Monitoring in Ontario	**B. Smit**
A Land Evaluation Model for Ontario	**B. Smit, R.S. Rodd, T. Phillips, J. Schildroth, W. Van Vuuren, M. Miller, S. Hilts, D.M. Brown, E. MacKintosh**
Agricultural Productivity in Areas Under Urban Influence	**W. Van Vuuren**
Cost-Benefit Analysis of Tile Drainage	**W. Van Vuuren**
Impact of Farm Tenancy on Agricultural Land Use	**W. Van Vuuren**

PEST MANAGEMENT AND DISEASE CONTROL

Project Title	*Researcher*
Competition Among Weed Species and Crop Plants	J.F. Alex, A.M. Paine
Ecology of Problem Weeds	J.F. Alex, A.M. Paine
Surveys of Weeds in Ontario	J.F. Alex
Biological Control of Weeds	J.F. Alex
Industrial Oils and Waxes from Weeds	J.F. Alex, J.B. Rattray, G.W. Anderson
Evaluation of New Herbicides and Combinations of Herbicides for Control of Annual and Perennial Weeds in Field Crops	G.W. Anderson, J.H. Dekker
Weed Control in Established Stands of Alfalfa, Birdsfoot Trefoil and Legume Grass Mixture	G.W. Anderson, J.H. Dekker
Biology of Perennial and Annual Weeds	J.H. Dekker, G.W. Anderson
To Assess the Interference Effects of Weeds on Crop Plants	J.H. Dekker, G.W. Anderson
Biochemical Effects of Herbicides in Plants	R.A. Fletcher
Genetics, Plant Breeding and Physiology of Herbicide Tolerance in Plants	V. Souza Machado, A. Ali
Mechanisms of Herbicide Action and Selectivity	G.R. Stephenson, E. Pelly, G. Ezra
Evaluation of Chemicals for Brush Control	G.R. Stephenson
Weed Control and Growth Retardation in Turf	C.M. Switzer
Growth and Development in Insects	S.E. Dixon, C. Schisler
Biology and Control of the Potato Stem Borer on Field Corn	C.R. Ellis, B. Beattie,
Control Experiments for Pests of Forage and Field Crops	C.R. Ellis, B. Beattie, O. Piedrahita
Distribution and Biology of Parasites of the Alfalfa Weevil	C.R. Ellis, B. Beattie
Threshold Limits in Pest Control	C.R. Ellis, B. Beattie
Biology, Ecology and Control of the Onion Maggot	F.L. McEwen, D.J. Madder

Project Title	*Researcher*
Insect Control on Potatoes	F.L. McEwen
Pesticides for Minor Crops	F.L. McEwen
Pest Diagnostic and Advisory Clinic	C.B. Kelly, R.T. Wukasch
Biology of Orchard Insects	J.E. Laing
Microbial Pathogens of Insects and Their Use in Control	J.E. Laing, C.J. Bolter
Insect Pests of Turfgrass	M.K. Sears
Biology, Ecology and Control of the Cabbage Maggot	M.K. Sears, C.R. Atkinson, A. Schaafsma
Toxic Interactions Between Pesticides in Aquatic Organisms	K.R. Solomon
Mechanisms of Resistance in Ontario Houseflies	K.R. Solomon, S. MacDonald
Control of Arthropod Parasites of Livestock	G.A. Surgeoner, W.E. Ralley
Fly Control in Barns and Stables	G.A. Surgeoner, R.S. McDonald, W.E. Ralley
Fly Control on Cattle	G.A. Surgeoner, W.E. Ralley
Fungal Parasites of Nematodes	G.L. Barron
A Survey of Disease Problems of Ornamental Greenhouse Plants and Detailed Studies of Specific Diseases	L. Busch
Verticillium Wilt of Economic Plants	L.V. Busch, J. Robb
Chemical and Genetic Control of Corn Diseases, Especially Head Smut	L.V. Edgington, C. Fisher
Systemic Fungicides: Efficacy for Control of Cereal Diseases	L.V Edgington, C. Fisher
Systemic Fungicides: Efficacy for Control of Vegetable Diseases	L.V Edgington, E. Valdes, P. Oudemans
Development of White Beans Resistant to Root Rot	R. Hall
Epidemiology and Control of Soybean White Mold	R. Hall, G. Boland
Air Pollutants and Disease Interaction in Potato	G. Hofstra, J.D. Holley
Virus Disease of the Commercial Tomato Crop	B.H. MacNeill, B. Mulkewytch, G. Rempe
Bacterial Speck of Tomato	B.H. MacNeill, R. Pitblado
Blister Spot of Mutsu Apple	B.H. MacNeill, K. Bedford
Tomato Bacterial Canker	B.H. MacNeill, J. Dick
Diseases in Muck Grown Vegetables	J.C. Sutton, P.D. Hildebrand, R. Maharaj
Epidemiology and Integrated Management of Diseases in Winter Wheat	J.C. Sutton, G. Roke

Project Title	*Researcher*
Epidemiology and Integrated Management of Diseases in Spring Barley	J.C. Sutton

ECONOMICS

Project Title	*Researcher*
Predicting the Changing Size Structure of Ontario Dairy Herds	J.H. Clark, J.B. Britney, K. McKinley
Ontario Dairy Farm Accounting Project	H.C. Driver, P.A. Wright, A. Gulliver
An Interregional Competition Study of the Milk Producing Sector of the Ontario Dairy Industry	H.C. Driver
Development and Application of a Risk Simulator	H.C. Driver
Determination of Farm Management Information for Analyzing and Planning Representative Dairy Farms in South-Western Ontario	H.C. Driver, D.J. Blackburn, J.B. Britney, P.A. Wright, S.O. Onwona
A Simulation Model for Long Range Planning and Expansion on Swine Farms	W.C. Pfeifler, R. Pieper
A Survey of Dairy Product Processing in Ontario	W.C. Pfeiffer
A Planning Model for Beef Production on Farms with Integrated Cow-Calf Feedlot Systems	W.C. Pfeiffer
Agroeconomics of Hybrid Poplar in Eastern Ontario	T.P. Phillips, W.C. Pfeiffer, B. Utria
Energy Utilization in the Ontario Agri-Food System	T.P. Phillips
Seasonal Employment in Tobacco Farming in S.W. Ontario	B. Smit, R. Morse
Evaluation of the Productivity of Ontario Agricultural Research	G.L. Brinkman, E.L. Menzie, B. Prentice
Farm Structure and Performance in Canada	G.L. Brinkman
Evaluation of Total Factor Productivity in Canadian Agriculture	G.L. Brinkman
Supply Management and Quota Values	M.A. MacGregor
Economics of Broiler Production in Ontario	M.A. MacGregor
Economic Potential of Wild Rice as a Commercial Crop in Northern Ontario	M.A. MacGregor
Forecasting Beef and Hog Prices	L.J. Martin, J. Henning
A Price Forecasting Mechanism for the Canadian Beef-Pork Sector	L.J. Martin, J. Henning
Analysis of Retail and Processing Margins for Canadian Broilers	L.J. Martin
Feasibility of an Electronic Auction for Slaughter Cattle in Ontario	L.J. Martin, M. Ceschi-Smith
The Use and Develpment of Econometric Models for Agricultural Commodities	K.D. Meilke, R. Chute, Y. Surry
Behavior of Ontario Dairy Farmers in Purchasing Replacement Animals and Semen	T.F. Funk, J. Britney, E.B. Burnside
Evaluation of the Dairy Feed Formulation Service	D.J. Blackburn, M.Sc. Student
Farmers' Perceptions of Problems and OMAF/U. of G. (OAC) Extension and Research	D.J. Blackburn, D.S. Pletsch, W.S. Young M.Sc. Student
The Economic Welfare of Recently Retired Rural Households	K.H. Brown
Changing Functions of Rural Settlements in Ontario's Farming Communities	F.A. Dahms
Social Well-Being of the Recently Retired	A.E. Martin-Matthews
Problems of Rural Youth	D.H. Pletsch, D.J. Blackburn, M. Hagarty, Technical
Provision and Consumption of Public Services in Rural Ontario: Implications of Exurban Development	B. Smith, A. Joseph, A. Poyner
Participation in Secondary Planning for Rural Agricultural Areas	J.S. Wolfe, J. Mowbray

ENGINEERING

Project Title	*Researcher*
Solar Heating of Farm Buildings	L. Otten, G. Mittal, R. Brown
Solar-Assisted Low-Temperature Corn Drying and Storage	L. Otten, G. Mittal, R. Brown
Heat Exchangers for Swine Buildings	D.R. Pattie, J.R. Ogilvie
Evaluation of the Formation, Storage, Handling and Feeding of Large Hay Bales	W.K. Bilanski, J. Winch, D. Mowat
High-Density Packaging of Forages for On-Farm Feeding or for Cash-Crop Sale	J.W. Bilanski, J. Winch, J.B. Stone
Influence of Soil Tools on the Physical Properties of Fine Textured Ontario Soils	J.H.A. Lee, C. Nywokedi, M. Ilyas, J. Ketcheson
Energy Self-Sufficient Farm Systems	P.H. Southwell
Vegetable Oils as Fuels for Diesel Engines	P.H. Southwell
Energy Accounting	P.H. Southwell, J. Britney

FOOD AND FOOD QUALITY

Project Title	*Researcher*
Toxicity of Processed and Heated Fats	J.C. Alexander, H. Yoshida, A. Wilson
The Role of Nitrites in Meat Preservation	D.L. Collins-Thompson
Antimicrobial Agents from Lactic Acid Bacteria as a Possible Replacement for Nitrite in Cured Meats	D.L. Collins-Thompson
Metabolic Activities of Psychrophilic Bacteria and Incidence of Opportunistic Microorganisms in Relation to the Quality of Dairy and Food Products	J.D. Cunningham, C. Saunders, M. Sc. Student
Microbial Utilization of Liquid Agricultural and Industrial Carbohydrate Wastes from the Food and Fermentation Industries	J.D. Cunningham, S.A. Wright

Project Title	*Researcher*
Microorganisms as Potential Food Sources (Single Cell Protein) for Human Food Supplementation	J.D. Cunningham, D. Simpson
Hydrogenation of Canola Oil	J.M. DeMan
Food Quality and Methods Measurement	J.M. DeMan
Biological Effects of Malonaldehyde	H.H. Draper, R.P. Bird, L. Piche, L. Polensek, E.O. Valli
Effect of Excess Dietary Protein and Phosphorus on the Homeostasis of Adult Bone	H.H. Draper, D. Yuen, D. Mast
Isolation and Identification of the Lactic Acid Bacteria from Yoghurt Cultures	C.L. Duitschaever, J. Van Esch
The Presence and Significance of Biogenic Amines in Canadian Wines	C.L. Duitschaever, C. Buteau
Vinification of Red Grapes by Carbonic Maceration	C.L. Duitschaever, G.C. Ashton
Edulcoration of White Wine with a Sweetener that is Not Susceptible to to Microbial Catabolism	C.L. Duitschaever, A. Smiles, G.C. Ashton
Assessment of Food Grades in Relation to Their Usefulness to Consumers	E.A. Gullett, D. Rowe
Fat Content of Chicken Broilers in Relation to Grade and Consumer Acceptability	E.A. Gullett, D. Rowe

Project Title	*Researcher*
Assessment of Safe Levels of Environmental Contaminants in Foods	B.J. Holub
The Coagulation and Separation of the Whey Protein Albumin from Cheese Whey. The Manufacture of These Whey Proteins into a Nutritious Food Product	D.M. Irvine, D.H. Bullock, A. Hill
Vitamin A Stability in UHT Processed Milk	Y. Kakuda
Studies on the Nitrosation of Phenols in Wood Smoke	Y. Kakuda
Process Control in Pilot Scale Wine Fermentation	A.G. Meiering, C. Fyfe, D. Cunningham, R. Subden
Control of Late Gas Blowing in Cheddar Cheese	A.N. Myhr, D.M. Irvine, S.K. Arora
Unsaturated Monoglycerides as Replacement for Polysorbate 80 in Frozen Desserts	A.M. Pearson
Agricultural By-Products as Unconventional Sources of Dietary Fiber	V.F. Rasper
Quality Testing of Canada Soft Wheats With Chopin Alveograph	V.F. Rasper, W. Zellen
Thermal Processing	F. Van De Voort, B. Manji
Infrared Reflectance	F.R. Van De Voort, J. Panford
Long Term Effects of Dietary Trans Fatty Acids	B.L. Walker, F.J. Mulvihill